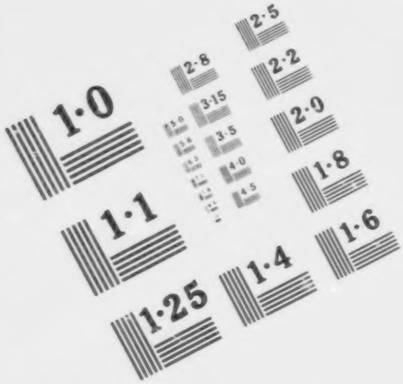

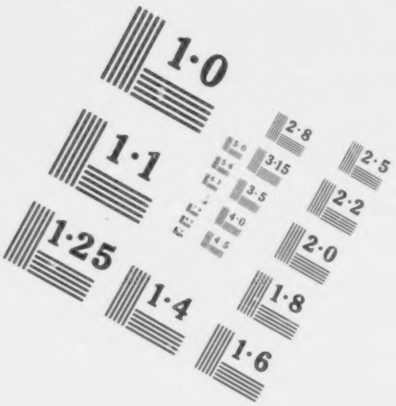

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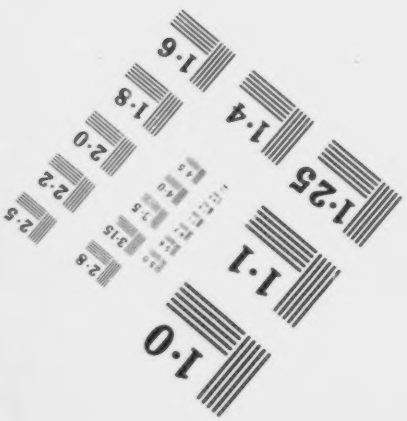

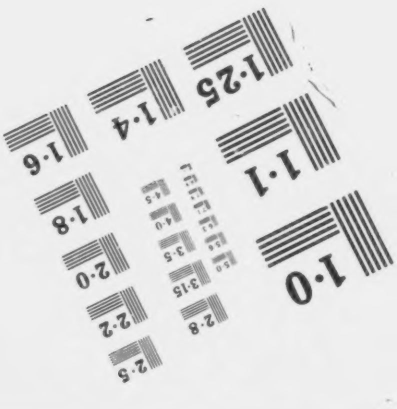

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Telecommunication

47

PART 80 TO END

Revised as of October 1, 1990

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AS OF OCTOBER 1, 1990

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To cite the regulations in this volume use title, part and section number. Thus, 47 CFR 80.1 *refers to title 47, part 80, section 1.*

Explanation

The Code of Federal Regulations is a codification of the general and permanent rules published in the Federal Register by the Executive departments and agencies of the Federal Government. The Code is divided into 50 titles which represent broad areas subject to Federal regulation. Each title is divided into chapters which usually bear the name of the issuing agency. Each chapter is further subdivided into parts covering specific regulatory areas.

ISSUE DATES

Each volume of the Code is revised at least once each calendar year and issued on a quarterly basis approximately as follows:

Title 1 through Title 16	as of January 1
Title 17 through Title 27	as of April 1
Title 28 through Title 41	as of July 1
Title 42 through Title 50	as of October 1

The appropriate revision date is printed on the cover of each volume.

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The contents of the Federal Register are required to be judicially noticed (44 U.S.C. 1507). The Code of Federal Regulations is prima facie evidence of the text of the original documents (44 U.S.C. 1510).

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The Paperwork Reduction Act of 1980 (Pub. L. 96-511) requires Federal agencies to display an OMB control number with their information collection request. Many agencies have begun publishing numerous OMB control numbers as amendments to existing regulations in the CFR. These OMB numbers are placed as close as possible to the applicable recordkeeping or reporting requirements.

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III). A list of CFR titles, chapters, and parts and an alphabetical list of agencies publishing in the CFR are also included in this volume.

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MARTHA L. GIRARD,
Director,
Office of the Federal Register.

October 1, 1990.

THIS TITLE

Title 47—**Telecommunication** is composed of five volumes. The parts in these volumes are arranged in the following order: Parts 0-19, Parts 20-39, Parts 40-69, Parts 70-79, and Part 80 to End, Chapter I—Federal Communications Commission. The last volume, Part 80 to End, also includes Chapter II—Office of Science and Technology Policy and National Security Council, and Chapter III—National Telecommunications and Information Administration, Department of Commerce. The contents of these volumes represent all current regulations codified under this title of the CFR as of October 1, 1990.

Part 73 contains a numerical designation of FM broadcast channels (§ 73.201) and a table of FM allotments designated for use in communities in the United States, its territories, and possessions (§ 73.202). Part 73 also contains a numerical designation of television channels (§ 73.603) and a table of channel assignments to listed communities in the United States, its territories, and possessions (§ 73.606).

The OMB control numbers for the Federal Communications Commission, appear in § 0.408 of Chapter I. For the convenience of the user § 0.408 is reprinted in the Finding Aids section of the second, third, fourth, and fifth volumes.

Redesignation tables for Chapter I—Federal Communications Commission appear in the Finding Aids section of the two volumes containing Parts 20-39, and Part 80 to End. A Cross Reference table table appears in the Finding Aids section of the volume containing Part 80 to End.

For this volume, Jacquelyn J. Demsky was Chief Editor. The Code of Federal Regulations publication program is under the direction of Richard L. Claypoole, assisted by Alomha S. Morris.

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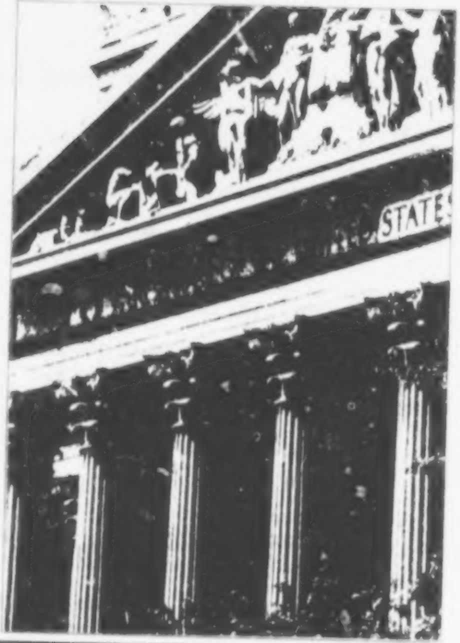

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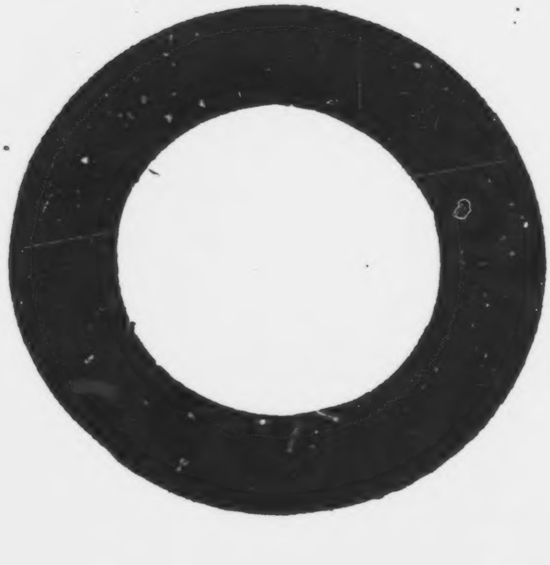

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AUTHORITY: Secs. 4, 303, 48 Stat. 1066, 1082, as amended; 47 U.S.C. 154, 303, unless otherwise noted. Interpret or apply 48 Stat. 1064-1068, 1081-1105, as amended; 47 U.S.C. 151-155, 301-609; 3 UST 3450, 3 UST 4726, 12 UST 2377.

SOURCE: 51 FR 31213, Sept. 2, 1986, unless otherwise noted.

GENERAL

Subpart A—General Information

§ 80.1 Basis and purpose.

This section contains the statutory basis for this part of the rules and provides the purpose for which this part is issued.

(a) *Basis.* The rules for the maritime services in this part are promulgated under the provisions of the Communications Act of 1934, as amended, which vests authority in the Federal Communications Commission to regulate radio transmission and to issue licenses for radio stations. The rules in this part are in accordance wtih applicable statutes, international treaties, agreements and recommendations to which the United States is a party. The most significant of these documents are listed below with the short title appearing in parenthesis:

Communications Act of 1934, as amended—(Communications Act).

Communications Satellite Act of 1962, as amended—(Communications Satellite Act).

International Telecommunication Union Radio Regulations, in force for the United States—(Radio Regulations).

Agreement Between the United States of America and Canada for the Promotion of Safety on the Great Lakes by Means of Radio, as amended, and the Technical Regulations annexed thereto—(Great Lakes Radio Agreement).

International Convention for Safety of Life at Sea, 1974, as amended, and the Annex thereto—(Safety Convention).

Vessel Bridge-to-Bridge Radiotelephone Act—(Bridge-to-Bridge Act).

(b) *Purpose.* This part states the conditions under which radio may be licensed and used in the maritime services. These rules do not govern radio stations operated by agencies of the U.S. Government.

§ 80.2 Other regulations that apply.

The Commandant, U.S. Coast Guard has promulgated regulations which affect radiotelecommunication equipment carriage and power source installation requirements for certain ships. Inquiries concerning applicable U.S. Coast Guard regulations are to addressed to the Commandant, U.S. Coast Guard, Washington, DC 20593, or to the nearest District Headquarters Office of the U.S. Coast Guard.

§ 80.3 Other applicable rule parts of this chapter.

Other FCC rule parts applicable to licensees in the maritime services include the following:

(a) *Part 0.* This part describes the Commission's organization and delegations of authority. Part 0 also lists available Commission publications, standards and procedures for access to Commission records and location on Commission monitoring stations.

(b) *Part 1.* This part includes rules of practice and procedure for license applications, adjudicatory proceedings, procedures for reconsideration and review of the Commission actions; provisions concerning violation notices and forfeiture proceedings; and the environmental processing requirements that, if applicable, must be complied with prior to the initiation of construction.

(c) *Part 2.* This part contains the Table of Frequency Allocations and special requirements in international regulations, recommendations, agreements, and treaties. This part also contain standards and procedures concerning marketing of radio frequency devices, and for obtaining equipment authorization.

(d) *Part 13.* This part contains information and rules for the licensing of commercial radio operators.

(e) *Part 17.* This part contains requirements for construction, marking and lighting of antenna towers.

(f) *Part 21.* This part contains rules concerning point-to-point microwave service authority relating to communication common carriers.

(g) *Part 42.* This part contains rules concerning the preservation of records of communication common carriers.

(h) *Part 43.* This part contains rules concerning reports of communication common carriers.

(i) *Part 61.* This part contains tariff rules applicable to communication common carriers.

(j) *Part 62.* This part contains rules concerning interlocking directorates relating to communication common carriers.

(k) *Part 63.* This part contains rules concerning the extension of lines and discontinuance of service by communication common carriers.

(l) *Part 64.* This part contains miscellaneous rules relating to communication common carriers.

(m) *Part 68.* This part contains technical standards for connection of terminal equipment to the telephone network.

(n) *Part 87.* This part contains rules for the aviation services. Some maritime frequencies are authorized for use by aircraft stations for safety and distress, public correpondence and for operational communications.

(o) *Part 94.* This part contains rules concerning the private microwave service relating to point-to-point communication requirements.

[51 FR 31213, Sept. 2, 1986, as amended at 55 FR 20398, May 16, 1990]

§ 80.5 Definitions.

Alaska—public fixed station. A fixed station in Alaska which is open to public correspondence and is licensed by the Commission for radio communication with Alaska-Private fixed stations on paired channels.

Alaska—private fixed station. A fixed station in Alaska which is licensed by the Commission for radio communication within Alaska and with associated ship stations, on single frequency channels. Alaska-private fixed stations are also eligible to communicate with Alaska-public fixed stations on paired channels.

Associated ship unit. A portable VHF transmitter for use in the vicinity of the ship station with which it is associated.

Automated maritime telecommunications system (AMTS). An automatic, integrated and interconnected maritime communications system serving ship stations on specified inland and coastal waters of the United Stations.

Automated mutual-assistance vessel rescue system (AMVER). An international system, operated by the U.S. Coast Guard, which provides aid to the development and coordination of search and rescue (SAR) efforts. Data is made available to recognized SAR agencies or vessels of any nation for reasons related to marine safety.

Bridge-to-bridge station. A radio station located on a ship's navigational bridge or main control station operating on a specified frequency which is used only for navigational communications, in the 156-162 MHz band.

Cargo ship safety radiotelegraphy certificate. A certificate issued after an inspection of a cargo ship radiotelegraph station which complies with the applicable Safety Convention radio requirements.

Cargo ship safety radiotelephony certificate. A certificate issued after inspection of a cargo ship radiotelephone station which complies with the applicable Safety Convention radio requirements.

Categories of ships. (1) When referenced in Part II of Title III of the Communications Act or the radio provisions of the Safety Convention, a ship is a *passenger ship* if it carries or is licensed or certificated to carry more than twelve passengers. A *cargo ship* is any ship not a passenger ship.

(2) A *commercial transport vessel* is any ship which is used primarily in commerce (i) for transporting persons or goods to or from any harbor(s) or port(s) or between places within a harbor or port area, or (ii) in connection with the construction, change in construction, servicing, maintenance, repair, loading, unloading, movement, piloting, or salvaging of any other ship or vessel.

(3) The term *passenger carrying vessel*, when used in reference to Part III, Title III of the Communications Act of the Great Lakes Radio Agreement, means any ship transporting more than six passengers for hire.

(4) *Power-driven vessel.* Any ship propelled by machinery.

(5)*Towing vessel.* Any commercial ship engaged in towing another ship astern, alongside or by pushing ahead.

(6) *Compulsory ship.* Any ship which is required to be equipped with radiotelecommunication equipment in order to comply with the radio or radio-navigation provisions of a treaty or statute to which the vessel is subject.

(7) *Voluntary ship.* Any ship which is not required by treaty or statute to be equipped with radiotelecommunication equipment.

Coast station. A land station in the maritime mobile service.

Commercial communications. Communications between coast stations and ship stations aboard commercial transport vessels, or between ship stations aboard commercial transport vessels, which relate directly to the purposes for which the ship is used including the piloting of vessels, movements of vessels, obtaining vessel supplies, and scheduling of repairs.

Day. (1) Where the word *day* is applied to the use of a specific frequency assignment or to a specific authorized transmitter power, its use means transmission on the frequency assignment or with the authorized transmitter power during that period of time included between one hour after local sunrise and one hour before local sunset.

(2) Where the word *day* occurs in reference to watch requirements, or to equipment testing, its use means the calendar day, from midnight to midnight, local time.

Digital selective calling (DSC). A synchronous system developed by the International Radio Consultative Committee (CCIR), used to establish contact with a station or group of stations automatically by means of radio. The operational and technical characteristics of this system are contained in CCIR Recommendation 493.

Direction finder (radio compass). Apparatus capable of receiving radio signals and taking bearings on these signals from which the true bearing and direction of the point of origin may be determined.

Distress signal. The distress signal is an internationally recognized radiotelegraph or radiotelephone transmission which indicates that a ship, aircraft, or other vehicle is threatened by grave and imminent danger and requests immediate assistance.

(1) In radiotelegraphy, the international distress signal consists of the group "three dots, three dashes, three dots", transmitted as a single signal in which the dashes are emphasized so as to be distinguished clearly from the dots.

(2) In radiotelephony, the international distress signal consists of the enunciation of the word "Mayday", pronounced as the French expression "m'aider". In case of distress, transmission of this particular signal is intended to ensure recognition of a radiotelephone distress call by stations of any nationality.

Distress traffic. All messages relative to the immediate assistance required by a ship, aircraft, or other vehicle in distress.

Emergency position indicating radiobeacon (EPIRB) station. A station in the maritime mobile service the emissions of which are intended to facilitate search and rescue operations.

Environmental communications. Broadcasts of information about the environmental conditions in which vessels operate, i.e., weather, sea conditions, time signals adequate for practical navigation, notices to mariners, and hazards to navigation.

Fleet radio station license. An authorization issued by the Commission for two or more ships having a common owner or operator.

Future global maritime distress and safety system (FGMDSS). An International Maritime Organization (IMO) worldwide coordinated maritime distress system designed to provide the rapid transfer of distress messages from vessels in distress to units best suited for giving or coordinating assistance. The system includes standardized equipment and operational procedures, unique identifers for each station, and the integrated use of frequency bands and radio systems to ensure the transmission and reception of distress and safety calls and messages at short, medium and long ranges.

Great Lakes. This term, used in this part in reference to the Great Lakes Radio Agreement, means all of Lakes Ontario, Erie, Huron (including Georgian Bay), Michigan, Superior, their connecting and tributary waters and the St. Lawrence River as far east as the lower exit of the St. Lambert Lock as Montreal in the Province of Quebec, Canada, but does not include any connecting and tributary waters other than: the St. Marys River, the St. Clair River, Lake St. Clair, the Detroit River and the Welland Canal.

Harbor or port. Any place to which ships may resort for shelter, or to load or unload passengers or goods, or to obtain fuel, water, or supplies. This term applies to such places whether proclaimed public or not and whether natural or artifical.

Inland waters. This term, as used in reference to waters of the United States, its territories and possessions, means waters that lie landward of the boundary lines of inland waters as contained in 33 CFR part 82, as well as waters within its land territory, such as rivers and lakes, over which the United States exercises sovereignty.

Marine utility station. A station in the maritime mobile service consisting of one or more handheld radiotelephone units licensed under a single authorization. Each unit is capable of operation while being hand-carried by an individual. The station operates under the rules applicable to ship stations when the unit is aboard a vessel, and under the rules applicable to private coast stations when the unit is on land.

Maritime control communications. Communications between private coast and ship stations or between ship stations licensed to a state or local governmental entity, which relate directly to the control of boating activities or assistance to ships.

Maritime mobile repeater station. A land station at a fixed location established for the automatic retransmission of signals to extend the range of communication of ship and coast stations.

Maritime mobile-satellite service. A mobile-satellite service in which mobile earth stations are located on board ships. Survival craft stations and EPIRB stations may also participate in this service.

Maritime mobile service. A mobile service between coast stations and ship stations, or between ship stations, or between associated on-board communication stations. Survival craft stations and EPIRB stations also participate in this service.

Maritime mobile service identities. An international system for the identification of radio stations in the maritime mobile service. The system is comprised of a series of nine digits which are transmitted over the radio path to uniquely identify ship stations, ship earth stations, coast stations, coast earth stations and groups of stations.

Maritime radiodetermination service. A maritime radiocommunication service for determining the position, velocity, and/or other characteristics of an object, or the obtaining of information relating to these parameters, by the propagation properties of radio waves.

Maritime support station. A station on land used in support of the maritime services to train personnel and to demonstrate, test and maintain equipment.

Navigational communications. Safety communications pertaining to the maneuvering of vessels or the directing of vessel movements. Such communications are primarily for the exchange of information between ship stations and secondarily between ship stations and coast stations.

Noncommercial communications. Communication between coast stations and ship stations other than commercial transport ships, or between ship stations aboard other than commercial transport ships which pertain to the needs of the ship.

Non-selectable transponder. A transponder whose coded response is displayed on any conventional radar operating in the appropriate band.

On-board communication station. A low-powered mobile station in the maritime mobile service intended for use for internal communications on board a ship, or between a ship and its lifeboats and liferafts during lifeboat drills or operations, or for communication within a group of vessels being towed or pushed, as well as for line handling and mooring instructions.

On-board repeater. A radio station that receives and automatically retransmits signals between on-board communication stations.

Open sea. The water area of the open coast seaward of the ordinary low-water mark, or seaward of inland waters.

Operational fixed station. A fixed station, not open to public correspondence, operated by entities that provide their own radiocommunication facilities in the private land mobile, maritime or aviation services.

Passenger ship safety certificate. A certificate issued by the Commandant of the Coast Guard after inspection of a passenger ship which complies with the requirements of the Safety Convention.

Pilot. Pilot means a Federal pilot required by 46 U.S.C. 764, a state pilot required under the authority of 46 U.S.C. 211, or a registered pilot required by 46 U.S.C. 216.

Port operations communications. Communications in or near a port, in locks or in waterways between coast stations and ship stations or between ship stations, which relate to the operational handling, movement and safety of ships and in emergency to the safety of persons.

Portable ship station. A ship station which includes a single transmitter intended for use upon two or more ships.

Private coast station. A coast station, not open to public correspondence, which serves the operational, maritime control and business needs of ships.

Public coast station. A coast station that offers radio communication common carrier services to ship radio stations.

Public correspondence. Any telecommunication which the offices and stations must, by reason of their being at the disposal of the public, accept for transmission.

Radar beacon (RACON). A receiver-transmitter which, when triggered by a radar, automatically returns a distinctive signal which can appear on the display of the triggering radar, providing range, bearing and identification information.

Radioprinter operations. Communications by means of a direct printing radiotelegraphy system using any alphanumeric code, within specified bandwidth limitations, which is authorized for use between private coast stations and their associated ship stations on vessels of less than 1600 gross tons.

Safety communication. The transmission or reception of distress, alarm, urgency, or safety signals, or any communication preceded by one of these signals, or any form of radiocommunication which, if delayed in transmission or reception, may adversely affect the safety of life or property.

Safety signal. (1) The safety signal is the international radiotelegraph or radiotelephone signal which indicates that the station sending this signal is preparing to transmit a message concerning the safety of navigation or giving important meteorological warnings.

(2) In radiotelegraphy, the international safety signals consists of three repetitions of the group "TTT", sent before the call, with the letters of each group and the successive groups clearly separated from each other.

(3) In radiotelephony, the international safety signal consists of three oral repetitions of "Security", pronounced as the French word "Securite", sent before the call.

Selectable transponder. A transponder whose coded response may be inhibited or displayed on a radar on demand by the operator of that radar.

Selective calling. A means of calling in which signals are transmitted in accordance with a prearranged code to operate a particular automatic attention device at the station whose attention is sought.

Ship earth station. A mobile earth station in the maritime mobile-satellite service located on board ship.

Ship or vessel. Ship or *vessel* includes every description of watercraft or other artificial contrivance, except aircraft, capable of being used as a means of transportation on water whether or not it is actually afloat.

Ship radio station license. An authorization issued by the Commission to operate a radio station onboard a vessel.

Ship station. A mobile station in the maritime mobile service located onboard a vessel which is not permanently moored, other than a survival craft station.

Station. One or more transmitters or a combination of transmitters and receivers, including the accessory equipment, necessary at one location for carrying on radiocommunication services.

Survival craft station. A mobile station in the maritime or aeronautical mobile service intended solely for survival purposes and located on any lifeboat, liferaft or other survival equipment.

Urgency signal. (1) The urgency signal is the international radiotelegraph or radiotelephone signal which indicates that the calling station has a very urgent message to transmit concerning the safety of a ship, aircraft, or other vehicle, or of some person on board or within sight.

(2) In radiotelegraphy, the international urgency signal consists of three repetitions of the group "XXX", sent before the call, with the letters of each group and the successive groups clearly separated from each other.

(3) In radiotelephony, the international urgency signal consists of three oral repetitions of the group of words "PAN PAN", each word of the group pronounced as the French word "PANNE" and sent before the call.

Vessel traffic service (VTS). A U.S. Coast Guard traffic control service for ships in designated water areas to prevent collisions, groundings and environmental harm.

Watch. The act of listening on a designated frequency.

52 FR 31213, Sept. 2, 1986, as amended at 2 FR 7417, Mar. 11, 1987; 52 FR 35244, ept. 18, 1987]

ubpart B—Applications and Licenses

80.11 Scope.

This subpart contains the procеures and requirements for the filing f applications for licenses to operate adio facilities in the maritime servеs. Part 1 of the Commission's rules ontains the general rules of practice nd procedure applicable to proceedgs before the FCC.

80.13 Station license required.

(a) All stations in the maritime servеs must be licensed by the FCC.

(b) One ship station license will be ranted for operation of all maritime ervices transmitting equipment on oard a vessel.

80.15 Eligibility for station license.

(a) *General.* A station license cannot granted to or held by a foreign govnment or its representative.

(b) *Public coast stations and Alaskaublic fixed stations.* A station license r a public coast station or an Alaskaublic fixed station cannot be granted or held by:

(1) Any alien or the representative any alien;

(2) Any foreign government or its presentative;

(3) Any corporation organized under e laws of any foreign government;

(4) Any corporation of which any ofer or director is an alien;

(5) Any corporation of which more an one-fifth of the capital stock is ned of record or voted by aliens or eir representatives or by a foreign vernment or its representative, or by corporation organized under the ws of a foreign country;

(6) Any corporation directly or indictly controlled by any other corporan of which any officer or more than e-fourth of the directors are aliens, the Commission finds that the blic interest will be served by the resal or revocation of such license; or

7) Any corporation directly or indictly controlled by any other corporan of which more than one-fourth of e capital stock is owned of record or voted by aliens, their representatives, or by a foreign government or its representatives, or by any corporation organized under the laws of a foreign country, if the Commission finds that the public interest will be served by the refusal or revocation of such license.

(c) *Private coast and marine utility stations.* The supplemental eligibility requirements for private coast and marine utility stations are contained in § 80.501(a).

(d) *Ship stations.* A ship station license may only be granted to:

(1) The owner or operator of the vessel;

(2) A subsidiary communications corporation of the owner or operator of the vessel;

(3) A State or local government subdivision; or

(4) Any agency of the U.S. Government subject to section 301 of the Communications Act.

(e) *EPIRB stations.* (1) Class C EPIRB stations will be authorized:

(i) For use on board vessels operating within 32 kilometers (approximately 20 miles) of shore and in the Great Lakes, or

(ii) On passenger and cargo vessels with survival craft as required or recommended by the U.S. Coast Guard.

(2) Class A or B EPIRB stations will be authorized for use on board the following types of vessels:

(i) Vessels authorized to carry survival craft; or

(ii) Vessels expected to travel in waters beyond the range of marine VHF distress coverage which is generally considered to be more than 32 kilometers (approximately 20 miles) offshore; or

(iii) Vessels required to be fitted with EPIRB's to comply with U.S. Coast Guard regulations.

(3) A 406.025 MHz EPIRBs may be used by any ship required by U.S. Coast Guard regulations to carry an EPIRB or by any ship that is equipped with a VHF ship radio station.

[51 FR 31213, Sept. 2, 1986, as amended at 53 FR 37308, Sept. 26, 1988]

§ 80.17 Administrative classes of stations.

(a) Stations in the Maritime Mobile Service are licensed according to class of station as follows:

(1) Public coast stations.

(2) Private coast stations.

(3) Maritime support stations.

(4) *Ship stations.* The ship station license may include authority to operate other radio station classes aboard ship such as; radionavigation, onboard, satellite, EPIRB, radiotelephone, radiotelegraph and survival craft.

(5) Marine utility stations.

(b) Stations on land in the Maritime Radiodetermination Service are licensed according to class of station as follows:

(1) Shore radiolocation stations.

(2) Shore radionavigation stations.

(c) Fixed stations in the Fixed Service associated with the maritime services are licensed as follows:

(1) Operational fixed stations.

(2) Alaska-public fixed stations.

(3) Alaska-private fixed stations.

§ 80.19 Standard forms to be used.

The following table indicates the correct standard form or other means to be used when submitting an application. Forms may be obtained from the Commission at Gettysburg, PA 17325, Washington, DC 20554 or any of its District Offices.

Class of station(s)	Application for	Use
Ship	New license	FCC Form 506.
	Renewal of license without modification	FCC Form 405-B
	Renewal of license with modification	FCC Form 506.
	Modification of license	FCC Form 506.
	Temporary operating authority in conjunction with application for a new license or modification of license.	FCC Form 506-A.
	Radio inspection and certification	FCC Form 801.[1]
	Exemption	FCC Form 820.
	Special temporary authority	Letter/Telegram.
	Transfer of control of corporation	FCC Form 703.
Public coast Private coast Operational fixed Shore radionavigation Shore radiolocation Maritime support Alaska-public fixed Alaska-private fixed Marine utility	New license	FCC Form 503.
	Modification of license	FCC Form 503.
	Renewal of license with modification	FCC Form 503.
	Assignment of authorization	FCC Forms 1046 and 503.
	Transfer of Control of Corporation	FCC Form 703.
	Renewal of license without modification	FCC Form 405-A.
	Special temporary authority	Letter/Telegram.

[1] FCC Form 808 also required when inspection is to be conducted during other than normal business hours.

§ 80.21 Supplemental information required.

Applications for radio stations to be located within designated radio protection areas, radio stations with a proposed antenna structure which will require antenna markings, a new public coast stations proposing operations in the 156-162 MHz band and new ship stations on vessels not located in the United States must contain supplementary information as indicated in this section. Other supplemental information may be required by other rule sections of this part concerning particular maritime services.

(a) To minimize harmful interference at the National Radio Astronomy Observatory site at Green Bank, Pocahontas County, WV, and at the Naval Radio Research Observatory site at Sugar Grove, Pendleton County, WV, an applicant for a new station authorization (other than mobile or temporary fixed), or for modification of an existing license to change the frequency, power, antenna location, height or directivity within the area bounded by 39°15'N. on the north, 78°30'W. on the east, 37°30'N. on the south and 80°30'W. on the west, must, at the time of filing such application with the Commission, notify the Director, National Radio Astronomy Observatory, Attn: Interference Office, Post Office Box No. 2, Green Bank, WV 24944, in

iting, of the geographical coordi-
tes of the antenna, antenna height,
tenna directivity if any, proposed
quency, type of emission, and
wer. The application must show the
te notification was made to the Ob-
rvatory. The Commission will allow
enty (20) days after receipt of the
tification for comments or objec-
ns. If a timely objection is received,
e Commission will consider the com-
nts or objections and act appropri-
ely.

b) Protection for Federal Communi-
ions Commission monitoring sta-
ns:

1) Geographical coordinates of FCC
ilities which require protection are
ed in § 0.121(c) of this chapter. Ap-
cations for stations (except mobile
tions) which will be located within
km (50 miles) of the referenced co-
linates are examined to determine
ent of possible interference. A
use protecting the monitoring sta-
n may be added to the station li-
se.

2) Prospective applicants of stations
which the calculated value of ex-
ted field strength exceeds 10 mV/
(–65.8 dBW/m^2) at the referenced
rdinates, should consult with the
C to determine if any protection is
essary. Write:

hief, Field Operations Bureau, Federal
mmunications Commission, Washington,
20554.

c) Each application for a new public
st station operating on frequencies
he band 156–162 MHz must include
supplementary information a chart,
h supporting data, showing the
vice area contour computed in ac-
dance with Subpart P of this part.

d) Each application for a new public
st station operating on frequencies
he band 156–162 MHz to be located
hin the coordination boundaries of
rangement "A" of the Canada/
.A. Frequency Coordination Agree-
nt above 30 MHz", must comply
n the provisions of the "Canada/
.A. Channeling Agreement for
F Maritime, Public Correspond-
e" as contained in § 80.57.

) An application for a new station
a vessel not located in the United
tes must include:

(1) A statement that the vessel is not documented or otherwise registered by any foreign authority; and

(2) A statement that the foreign authorities where the vessel is located will not or cannot license the vessel radio equipment, or that they do not object to the licensing of the equipment by the United States.

§ 80.23 Filing of applications.

Rules about the filing of applications for radio station licenses are contained in this section.

(a) Each application must specify an address in the United States to be used by the Commission in serving documents or directing correspondence to the licensee.

(b) An original of each application must be filed.

(c) Each application must be filed with the Federal Communications Commission, Gettysburg, PA 17326 unless otherwise noted on the application form. Applications requiring fees as set forth at part 1, subpart G of this chapter must be filed in accordance with § 0.401(b) of the rules.

(d) One application for two or more new maritime utility stations may be submitted when the applicant and proposed area of operation for each station is the same.

(e) One application for transfer of control may be submitted for two or more stations subject to this part when the individual stations are clearly identified and the following elements are the same for all existing or requested station authorizations involved:

(1) Applicant;

(2) Specific details of basic request.

[51 FR 31213, Sept. 2, 1986, as amended at 52 FR 10231, Mar. 31, 1987]

§ 80.25 License term.

(a) Licenses for stations in the maritime services will normally be issued for a term of five years from the date of original issuance, major modification, or renewal.

(b) Licenses for stations engaged in developmental operation will be issued for a period not to exceed one year from date of grant.

§ 80.29 Changes during license term.

(a) The following table indicates the required action for changes made during the license term:

Type of change	Required action
Mailing address	Written notice to the Commission.
Name of licensee (without change in ownership, control or corporate structure).	Written notice to the Commission.
Transfer of control of a corporation.	Comply with § 1.924 of this chapter.
Assignment of a radio station license.	Comply with § 1.924 of this chapter.
Name of the vessel	Written notice to the Commission.
Addition of transmitting equipment which operates on a frequency or frequency band not authorized on present license.	Application for modification of license.
Addition or replacement of transmitting equipment on a frequency or frequency band authorized on present license	None (provided the equipment is properly type accepted and the emission characteristics remain the same).

(b) Written notices must be sent to the Federal Communications Commission, Gettysburg, PA 17325.

§ 80.31 Cancellation of license.

When a station subject to this part which is not a communication common carrier permanently discontinues operation, the licensee must return the station license to the Commission's office at P.O. Box 1040, Gettysburg, PA 17325, for cancellation. Communication common carrier stations subject to this part must comply with the discontinuance of service provisions of part 63 of this chapter.

§ 80.33 Developmental license.

This section contains rules about the licensing of developmental operations at stations subject to this part.

(a) *Supplemental eligibility.* An authorization for developmental operation will be issued only to persons eligible to operate such stations on a regular basis.

(b) *Showing required.* Each application for a developmental license must be accompanied by a letter showing that:

(1) The applicant has an organized plan of development leading to an objective;

(2) A point has been reached in the program where actual transmission by radio is essential to progress;

(3) The program will contribute to the use of the radio services subject to this part;

(4) The program will be conducted by qualified personnel;

(5) The applicant is legally qualified and possesses technical facilities for conduct of the program as proposed; and

(6) The public interest, convenience and necessity will be served by the proposed operation.

(c) *Signature and statement of understanding.* The showing must be signed by the applicant and state that the applicant agrees that any developmental license issued will be accepted with the express understanding that it is subject to change in any of its terms or to cancellation in its entirety at any time, upon reasonable notice but without a hearing, if, in the opinion of the Commission, circumstances should so require.

(d) *Assignable frequencies.* Applicants for a developmental license may be authorized to use a frequency or frequencies available for the service and class of station proposed. The number of frequencies assignable to a particular station will depend upon the specific requirements of the developmental program and the number of frequencies available for use in the area where the station is to be operated.

(e) *Developmental program.* (1) The developmental program as described by the applicant in the application for authorization must be substantially followed unless the Commission otherwise directs.

(2) Where some phases of the developmental program are not covered by the general rules of the Commission and the rules in this part, the Commission may specify supplemental or additional requirements or conditions.

(3) The Commission may, from time to time, require a station engaged in developmental work to conduct special tests which are reasonable to the authorized developmental program.

(f) *Use of developmental stations.* (1) Stations authorized to conduct developmental operations must conform to

l applicable technical and operating
quirements contained in this part,
less a waiver is specifically provided
the station authorization.

(2) Communication with any station
a country other than the United
ates is prohibited unless specifically
ovided in the station authorization.

(3) Developmental operations must
t cause harmful interference to the
eration of stations regularly author-
ed to use the frequency or frequen-
es.

g) *Report of operation required.* A
port on the results of the develop-
ental program must be filed within
days of the expiration of the li-
nse. A report must accompany a re-
est for renewal of the license. Mat-
rs which the applicant does not wish
disclose publicly may be so labeled;
ey will be used solely for the Com-
ssion's information. However, public
sclosure is governed by § 0.467 of
is chapter. The report must include
e following:

1) Results of operation to date.

2) Analysis of the results obtained.

3) Copies of any published reports.

4) Need for continuation of the pro-
am.

5) Number of hours of operation on
ch authorized frequency during the
rm of the license to the date of the
port.

0.37 One authorization for a plurality of stations.

Marine utility stations. One station
ense may be issued to authorize a
signated maximum number of
rine utility stations operating at
nporary unspecified locations, nor-
lly in multiples of ten stations
en:

a) The licensee of each station is
e same; and

b) The authorized area of operation
each station is the same.

0.39 Authorized station location.

This section describes the circum-
nces under which a coast station lo-
ion is classified as permanent or
nporary unspecified.

a) *Permanent.* Whenever a station
o transmit from a single location,
e station location is *permanent* and the location must be shown on the application.

(b) *Temporary unspecified.* Whenever a station is to transmit from unspecified locations within a prescribed geographical area, the station location is *temporary unspecified* and the proposed geographical operating area must be shown on the application.

§ 80.41 Control points and dispatch points.

This section applies to coast or fixed stations at permanent locations.

(a) Applicants must provide the address or location of the control point where station records will be kept.

(b) When the address or location of a control point where station records are kept is to be changed, the licensee must request a modification of the station license.

(c) Control points not collocated with station records and dispatch points may be installed and used without obtaining any authorization from the Commission.

§ 80.43 Equipment acceptable for licensing.

Transmitters listed in § 80.203 must be type accepted for a particular use by the Commission based upon technical requirements contained in subparts E and F of this part.

§ 80.45 Frequencies.

When an application is submitted on FCC Form 503, the applicant must propose frequencies to be used by the station. The applicant must ensure that frequencies requested are consistent with the applicant's eligibility, the proposed class of station operation and the frequencies available for assignment as contained in subpart H of this part.

§ 80.47 Operation during emergency.

A station may be used for emergency communications when normal communication facilities are disrupted. The Commission may order the discontinuance of any such emergency communication service.

§ 80.49 Time in which station is placed in operation.

This section applies to public coast and public fixed stations. When a new license has been issued or additional operating frequencies have been authorized, if the station or frequencies authorized have not been placed in operation within eight months from the date of the grant, the authorization becomes invalid and must be returned to the Commission for cancellation.

§ 80.51 Ship earth station licensing.

(a) In cases where a ship earth station is required to be commissioned before it is certified to use a privately owned satellite system, FCC Form 506 must be submitted to the Commission prior to transmission on any of the satellite frequency bands allocated for maritime satellite communications.

(b) A ship earth station authorized to operate the INMARSAT space segment must display the Commission license in conjunction with the commissioning certificate issued by the INMARSAT Organization. Ship earth stations that were operating in the MARISAT system and are not commissioned by the INMARSAT Organization will continue to be used in the INMARSAT system without a commissioning certificate issued by the INMARSAT Organization. The continued use of such equipment, however, will not be permitted after September 1, 1991, unless a commissioning certificate is obtained from the INMARSAT Organization. Notwithstanding the requirements in this paragraph, ship earth stations can operate in the INMARSAT space segment without an INMARSAT issued commissioning certificate provided an appropriate written approval is obtained from the INMARSAT Organization in addition to the Commission's license.

§ 80.53 Application for a portable ship station license.

(a) The Commission may grant a license permitting operation of a portable ship station aboard different vessels of the United States. Each application for a portable ship station must include a showing that:

(1) The station will be operated as an established class of station on board ship, and

(2) A station license for portable equipment is necessary to eliminate frequent application to operate a ship station on board different vessels.

§ 80.55 Application for a fleet station license.

(a) An applicant may apply for licenses for two or more radiotelephone stations aboard different vessels on the same application. Under these circumstances a fleet station license may be issued for operation of all radio stations aboard the vessels in the fleet.

(b) The fleet station license is issued on the following conditions:

(1) The licensee must keep a current list of vessel names and registration numbers authorized by the fleet license;

(2) The vessels do not engage in voyages to any foreign country;

(3) The vessels are not subject to the radio requirements of the Communications Act or the Safety Convention.

§ 80.56 Transfer of ship station license prohibited.

A ship station license may not be assigned. Whenever the vessel ownership is transferred, the previous authorization must be forwarded to the Commission for cancellation. The new owner must file for a new authorization.

§ 80.57 Canada/U.S.A. channeling arrangement for VHF maritime public correspondence.

(a) *Canada/U.S.A. arrangement.* Pursuant to arrangements between the United States and Canada, assignment of VHF frequencies in the band 156-162 MHz to public coast stations in certain areas of Washington state, the Great Lakes and the east coast of the United States must be made in accordance with the provisions of this section.

(b) *Definitions.* On the west coast specific terms are defined as follows:

(1) *Inland Waters Public Correspondence Sector.* A distinct geographical area in which one primary and one supplementary channel is al-

. number of local channels
be authorized.
astal Waters Public Corre-
e Sector. A distinct geo-
area in which one primary
supplementary channel is al-
ocal channels may also be au-

nd Waters. Inland waters of
Washington and British Co-
ounded by 47 degrees latitude
outh, the Canada/U.S.A. Co-
n Zone Line B on the north,
e west by 124 degrees 40 min-
itude at the west entrance to
of Juan de Fuca.
stal Waters. Waters along the
oast of Washington state and
r Island within the Canada/
ordination Zone.
nd Waters Primary Channel.
l intended to cover the great-
a of an Inland Waters Public
ndence Sector. It may provide
erage to an adjacent sector
not provide coverage beyond
ent sector. Harmful interfer-
ond the adjacent sector must
. Only one primary channel
thorized in any sector.
and Waters Supplementary
A channel intended to im-
erage within a sector or to re-
ic congestion on the primary
t may provide some coverage
jacent sector but must not
overage beyond the adjacent
armful interference beyond
ent sector must not occur.
supplementary channel will
ized in any sector.
nd Waters Local Channel. A
esigned to provide local cov-
ertain bays, inlets and ports
erage by primary or supple-
channels is poor or where
ffic loading warrants. A local
ust not cause harmful inter-
any primary or supplemen-
nels. Coverage must be con-
ne designated sector.
tal Waters Primary Channel.
5) except for technical char-
.
stal Waters Supplementary
Same as (6) except for tech-
acteristics.

(10) *Coastal Waters Local Channel.* Same as (7) except for technical characteristics.

(c) *Technical characteristics.* On the west coast, technical characteristics of public correspondence stations will be as follows:

(1) *Inland Waters Primary and Supplementary Channels.* The effective radiated power (ERP) must not exceed 60 watts. Antenna height must not exceed 152 meters (500 feet) above mean sea level (AMSL) with the exceptions noted in paragraph (d)(5) of this section.

(2) *Inland Waters Local Channel.* ERP must not exceed 8 watts with an antenna height of no more than 15 meters (50 feet) AMSL or the ERP must not exceed 2 watts with an antenna height of no more than 30 meters (100 feet) AMSL.

(3) *Coastal Waters Primary and Supplementary Channels.* ERP must not exceed 125 watts with no antenna restrictions.

(4) *Coastal Waters Local Channel.* ERP must not exceed 10 watts with a maximum antenna height of 76 meters (250 feet) AMSL.

(5) Harmful interference will be determined and resolved using the definition and procedures of the ITU Radio Regulations.

(6) To keep the ERP and antenna elevations at a minimum and to limit coverage to the desired areas, an informal application may be filed for special temporary authority in accordance with §§ 1.41 and 1.925 to conduct a field survey to obtain necessary data for informal application. Such data may accompany the application and be used in lieu of theoretical calculations as required in subpart P of this part. The Seattle FCC District Office must be notified in advance of scheduled tests.

(d) *Canada/U.S.A. channeling arrangement for West Coast VHF maritime mobile public correspondence.* (1) The provisions of the Canada/U.S. channeling arrangement apply to waters of the State of Washington and of the Province of British Columbia within the coordination boundaries of "Arrangement A" of the Canada/U.S.A. Frequency Coordination Agreement above 30 MHz. In addition, all inland waters as far south as Olympia are to be included. A map of these waters is contained in paragraph (d)(6) of this section, Figure 1.

(2) The channeling arrangement applies to the following VHF public correspondence channels: Channels 24, 84, 25, 85, 26, 86, 27, 87 and 28.

(3) Public correspondence stations may be established by either country in accordance with the provisions of the arrangements. However, there must be an exchange of information prior to the establishment of new stations or a change in technical parameters of existing stations. Any channel except that used as primary or supplementary channel in a given sector is available for use as a local channel in that sector. Local channels are not protected from interference caused by primary or supplementary channels in adjacent sectors if these stations are in compliance with this section.

(4) Preliminary local Canadian/U.S. coordination is required for all applications at variance with this section. This coordination will be in accordance with the provisions of Arrangement "A" of the Canada/U.S. Frequency Coordination Agreement over 30 MHz. Stations at variance with the arrangement are not protected from interference and must not cause interference to existing or future stations which are in accordance with the agreement.

(5) Stations in existence at the time of the arrangement must have complied with the provisions of the arrangement within 12 months after it became effective with the following exceptions:

(i) Public coast (VHF) stations:

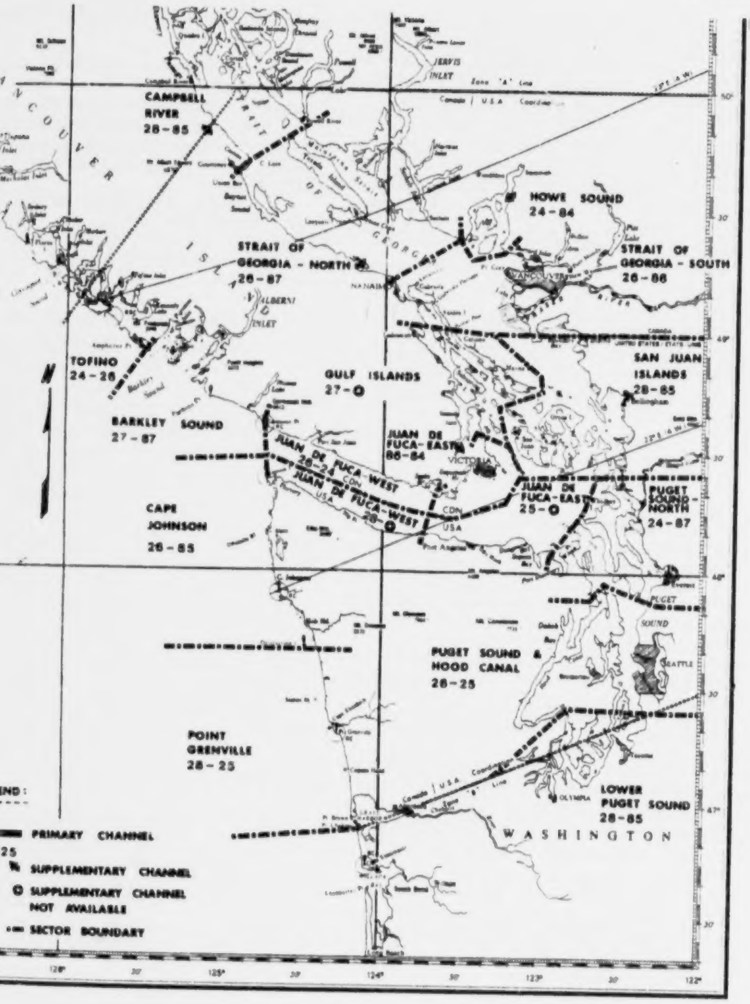
KOH627 Tacoma, Washington
KOH630 Seattle, Washington
WXY956 Camano, Washington
VAI2 Mount Parke, British Columbia
VAS5 Watts Point, British Columbia
XLK672 Bowen Island, British Columbia

(ii) These stations employing frequencies assigned at the time of the arrangement may be maintained with existing antenna heights in excess of 152 meters (500 feet) unless harmful interference to existing stations is identified and reported directly to the Federal Communications Commission or through the Public Correspondence Committee of the North Pacific Marine Radio Council.

(6) The agreed channeling arrangements for the west coast are as follows:

Public correspondence sector	Primary channel	Supplementary channel
British Columbia (Coastal Waters):		
Tofino	24	26
Barkley Sound	27	87
British Columbia (Inland Waters)		
Juan de Fuca West (Canada)	26	24
Juan de Fuca East (Canada)	86	84
Gulf Islands	27	[1]
Strait of Georgia South	26	86
Howe Sound	24	84
Strait of Georgia North	26	87
Campbell River	28	85
Washington (Coastal Warers):		
Cape Johnson	26	85
Point Grenville	28	25
Washington (Inland Waters):		
Juan de Fuca West (U.S.A.)	28	[1]
Juan de Fuca East (U.S.A.)	25	[1]
San Juan Islands	28	85
Puget Sound North	24	87
Puget Sound Hood Canal	26	25
Lower Puget Sound	28	85

[1] Supplementary channel not available.


CAMPBELL RIVER 28 - 85
HOWE SOUND 24 - 84
STRAIT OF GEORGIA - NORTH 26 - 87
STRAIT OF GEORGIA - SOUTH 26 - 88
JERVIS INLET
Zone "A" Line
Canada | U.S.A. Coordination
ALBERNI INLET
NANAIMO
VANCOUVER
FRASER RIVER
TOFINO 24 - 26
GULF ISLANDS 27 - O
SAN JUAN ISLANDS 28 - 85
BARKLEY SOUND 27 - 87
JUAN DE FUCA-EAST 86 - 84
VICTORIA
JUAN DE FUCA-WEST 26-24 CDN
JUAN DE FUCA-WEST 26-O USA
JUAN DE FUCA-EAST 25 - O
CDN
USA
PUGET SOUND-NORTH 24 - 87
CAPE JOHNSON 26 - 85
PUGET SOUND
PUGET SOUND & HOOD CANAL 28 - 25
SEATTLE
POINT GRENVILLE 28 - 25
LOWER PUGET SOUND 28 - 85
OLYMPIA
WASHINGTON
END:
PRIMARY CHANNEL
25
SUPPLEMENTARY CHANNEL
O SUPPLEMENTARY CHANNEL NOT AVAILABLE
SECTOR BOUNDARY
50°
30'
49°
30'
48°
30'
47°
30'
126°
30'
125°
30'
124°
30'
123°
30'
122°

(e) *Canada/U.S.A. VHF channeling arrangement on the Great Lakes and the St. Lawrence Seaway.* Channels on the Great Lakes and the St. Lawrence Seaway will be assigned as follows:

(1) The provisions of the arrangement apply to the waters of the Great Lakes and the St. Lawrence Seaway within the coordination boundaries of "Arrangement A" of the Canada/U.S.A. Frequency Coordiantion Agreement above 30 MHz.

(2) The arrangement applies to the following public correspondence channels: Channels 24, 84, 25, 85, 26, 86, 27, 87, 28, and 88.

(3) Canada and the U.S.A. use the following channeling arrangement:

(i) Canadian channels: 24, 85, 27, 88 (Note 1).

(ii) U.S.A. channels: 84, 25, 86, 87, 28 (Note 2).

(iii) Shared channels: 26 (Note 3).

NOTES:

1. Also assignable to U.S. Stations within the frequency coordination zone following successful coordination with Canada.

2. Also assignable to Canadian station within the frequency coordination zone following successful coordination with the United States.

3. Changes to existing assignments and new assignments within the frequency coordination zone of either country are subject to prior coordination with the other Administration.

(f) *Canada/U.S.A. channeling arrangement for East Coast VHF maritime mobile public correspondence.* For purposes of this section, channels on the east coast will be assigned as follows:

(1) The provisions of the arrangement apply to the Canadian and U.S.A. east coast waters including the St. Lawrence Seaway within the coordination boundaries of "Arrangement A" of the Canada/U.S.A. Frequency Coordination Agreement above 30 MHz.

(2) The arrangement applies to the following public correspondence channels: Channels 24, 84, 25, 85, 26, 86, 27, 87, 28, and 88.

(3) Canada and the U.S.A. use the following channeling arrangement:

(i) Canadian channels: 24, 85, 27, 88 (Note 1).

(ii) U.S.A. channels: 84, 25, 86, 87, 28 (Note 2).

(iii) Shared channel: 26 (Note 3).

NOTES:

1. Also assignable to U.S. stations within the frequency coordination zone following successful coordination with Canada.

2. Also assignable to Canadian stations within the frequency coordination zone following successful coordination with the United States.

3. Changes to existing assignments and new assignments within the frequency coordination zone of either country are subject to prior coordination with the other Administration.

§ 80.59 Compulsory ship stations.

(a) *Application for inspection and certification.* An application for inspection and certification must be submitted to the Engineer in Charge of the FCC District Office nearest the proposed place of inspection on one of the following forms at least three days before the proposed inspection date:

(1) FCC Form 801 must be used to apply for a ship radio inspection on board ships subject to Part II or III of Title III of the Communications Act, the Safety Convention or the Great Lakes Radio Agreement. In addition, FCC Form 801 must be used to apply for inspections of bridge-to-bridge radio stations on board vessels subject to the Vessel Bridge-to-Bridge Radiotelephone Act when they are additionally subject to any of the laws and treaties mentioned in the previous sentence.

(2) FCC Form 808 must be used to apply for a ship radio inspection on board ships subject to Part II of Title III of the Communications Act or the Great Lake Radio Agreement on a Sunday or national holiday or during other than established working hours on any other day.

(b) *Responsibilities.* Applicants for a ship radio inspection subject to Part II or III of Title III of the Communications Act, the Safety Convention, or the Great Lakes Radio Agreement must ensure that a licensed radio operator of the required class and endorsements, and sufficient personnel to lower and raise antennas and to launch any radio equipped survival craft are available on the ship at the time of inspection. The radio operator provided must be either a regularly as-

l radio operator or a service rep-
tative.
Application for exemption. FCC
820 must be used to apply for
ption from the radio provisions
rt II or III of Title III of the
unications Act, the Safety Con-
n, or the Great Lakes Radio
ment, or for modification or re-
of an exemption previously
ed. Applications for exemptions
be submitted to the Secretary,
al Communications Commission,
ngton, DC 20554. In cases of
ency, the Commission may con-
n informal application which in-
the full information normally
ned on the formal application.
'emporary waiver of annual in-
on. The Commission may grant a
of the annual inspection for a
not to exceed 30 days from the
f first arrival of a ship at a
States port directly from a for-
ort for the sole purpose of ena-
he vessel to proceed coastwise
ther port in the United States
an inspection can be made.
n informal application (such as
r or telegram, or telephone call
onfirmed by letter) for waiver
pection must be submitted by
the vessel owner, the vessel's
ng agency, the ship station li-
or the master of the vessel. The
tion must be submitted not ear-
n 3 days in advance of the ves-
rival at the United States port.
plication must be submitted to
mmission's Engineer in Charge
FCC District Office nearest the
arrival. The application must

ne ship's name and radio call

he name of the first United
port of arrival directly from a
port;
he date of arrival;
'he date and port at which
inspection will be formally re-
to be conducted;
eason for requesting waiver;

statement that the ship's com-
radio equipment is operable.
mpensation for overtime serv-
der section 4(f)(3) of the Com-
ions Act, Engineers in Charge

and Radio Engineers of the Field Operations Bureau of the Federal Communications Commission who may be required to remain on duty to perform services in connection with the inspection of ship radio equipment and apparatus for the purpose of Part II of Title III of the Communications Act or the Great Lakes Radio Agreement at night or on Sundays and holidays must receive extra compensation to be paid by the master, owner, or agent of the vessel under the following regulations:

(1) The rates of extra compensation are payable in cases where the services of such engineers have been duly requested and they have reported for duty, even though no actual service may be performed.

(2) The extra compensation for overtime services is in addition to the regular compensation paid by the government in the cases of engineers whose compensation is fixed on the ordinary per diem basis and those receiving compensation per month or per annum.

(3) Extra compensation for *waiting time* will not be allowed unless and until the engineer actually reports for duty.

(4) For the purpose of computing extra compensation, the word *night* means the time between the established closing hour of one day at the office involved and the established opening hour of the following business day at such office, but will not include any such time within the 24 hours of a Sunday or holiday. Each Sunday and each holiday will comprise the 24 hours between midnight and midnight. For the purposes of this section, the time between the established closing hour of an office and midnight of the day immediately preceding a Sunday or holiday and the time from midnight until the established opening hour of the day immediately following the Sunday or holiday will be considered as a single night. The term *holiday* includes only government recognized holidays, and such other days as may be designated national holidays by the President or Congress.

(5) For authorized service in excess of 8 hours on any day excluding Sunday and holidays, extra compensa-

tion equivalent to one-half day's pay is payable for each 2 hours or fraction thereof of at least 1 hour that the overtime extends beyond the 8 hours when the overtime is not less than 1 hour. The maximum amount which may be paid for authorized overtime services on any day other than on a Sunday or holiday must not exceed 2½ days' pay.

(6) In computing the amount earned for overtime at the rate of "one-half day's pay for each 2 hours or fraction thereof of at least 1 hour that the overtime extends beyond the established closing hour", one-half day's pay must be one-half of the gross daily rate of pay; each 2 hours is the time period for the purpose of computation; at least 1 hour means the minimum service in any 2-hour overtime period for which extra pay may be granted, and each additional period in the amount of 2 hours or fraction thereof of at least 1 hour will entitle the engineer to an additional one-half day's pay. Payment of extra compensation for services consisting of at least 1 hour is authorized from the established closing hour, even though such services may not actually begin until later, *Provided*, That the engineer rendering the service remained on duty after the established closing hour, in which case the time between the established closing hour, and the time of beginning the actual services must be computed as waiting time. Where the performance of actual service is preceded by such a waiting time there should be an affirmative statement that the engineer was required to remain on duty between the established closing hour and the time of beginning the actual services.

(7) In computing extra compensation where the services rendered are in broken periods, the time served should be combined with the waiting time and computed as continuous service.

(8) The same considerations must apply when charging for waiting time as govern the charge for services actually rendered. No charge should be made unless after having reported for duty the waiting time amounts to at least 1 hour.

(9) For any authorized services performed on Sundays and holidays, totalling not more than 8 hours, extra compensation is payable equivalent to two day's pay in addition to any regular compensation for such days. For any authorized service in excess of 8 hours (starting either before or after 5 p.m. local time) extra compensation at the rate of one-half days' pay, based on the normal daily rate of pay, for each two hours of service or fraction thereof of not less than 1 hour, is payable in addition to the extra compensation payable for service up to and including 8 hours of service. The maximum extra compensation payable for work on Sundays and holidays is 4½ days' pay.

(10) When engineers are in travel status overtime will apply the same as if they were at an official station. However, compensation for such overtime must not include travel time.

(11) Assessments and collection of fees against steamship companies for overtime services must be made even though the payment to employees for such services may not be made until funds are appropriated for that purpose.

(12) An application on FCC Form 808 must be filed with the office being requested to furnish overtime services before such assignment can be made.

(13) Overtime services must be billed to the steamship companies as soon as possible after the services have been performed and on a collection voucher (FCC Form 907). Remittance shall be by postal money order or certified check payable to the *Collector of Customs, Treasury Department* and forwarded to that officer at the port indicated on the voucher, who shall in turn deposit such remittance on a properly designated receipt account.

(14) Protests against the extraction of extra compensation must be forwarded to the Commission at Washington, DC, and a copy sent to the office which furnished the overtime services.

ubpart C—Operating Requirements and Procedures

STATION REQUIREMENTS—GENERAL

.61 Commisson inspection of stations.

ll stations and required station
ords must be made available for in-
ction by authorized representatives
he Commission.

.63 Maintenance of transmitter power.

.) The power of each radio trans-
ter must not be more than that
essary to carry on the service for
ch the station is licensed.

) Except for transmitters using
le sideband and independent side-
d emissions, each radio transmitter
d by the manufacturer for carrier
er in excess of 100 watts must con-
the instruments necessary to de-
ine the transmitter power during
peration.

STATION REQUIREMENTS—LAND STATIONS

**7 General facilities requirements for
oast stations.**

All coast stations licensed to
mit in the band 156-162 MHz
be able to transmit and receive
6.800 MHz and at least one work-
equency in the band.

All coast stations that operate te-
ny on frequencies in the 1605-
kHz band must be able to trans-
nd receive using J3E emission on
requency 2182 kHz and at least
orking frequency in the band. In
on, each such public coast sta-
nust transmit and receive H3E
on on the frequency 2182 kHz.

**Facilities requirements for public
st stations using telegraphy.**

ic coast station using telegraphy
be provided with the following
es.

Stations having a frequency as-
nt below 150 kHz must:

Transmit A1A emission on at
one working frequency within
nd 100-150 kHz;

Receive A1A emission on all
channels authorized for trans-
by mobile stations operating
in the maritime mobile service for telegraphy within the band 100-150 kHz.

(b) Stations having a frequency assignment within the 405-525 kHz band must transmit and receive on 500 kHz and at least one working frequency in the band.

(c) Stations having frequency assignments above 4000 kHz must be equipped to receive on each of their assigned frequencies and all ship station radiotelegraphy frequencies in the same sub-band as the assigned frequency of the coast station. See subpart H of this part for the list of frequencies.

§ 80.69 Facilities requirement for public coast stations using telephony.

Public coast stations using telephony must be provided with the following facilities.

(a) When the station is authorized to use frequencies in the 1605-3500 kHz band, equipment meeting the requirements of § 80.67(b) must be installed at each transmitting location.

(b) The transmitter power on the frequency 2182 kHz must not exceed 50 watts carrier power for normal operation. During distress, urgency and safety traffic, operation at maximum power is permitted.

§ 80.70 Special provisions relative to coast station VHF facilities.

(a) Coast stations which transmit on the same radio channel above 150 MHz must minimize interference by reducing radiated power, by decreasing antenna height or by installing directional antennas. Coast stations at locations separated by less than 241 kilometers (150 miles) which transmit on the same radio channel above 150 MHz must also consider a time-sharing arrangement. The Commission may order station changes if agreement cannot be reached between the involved licensees.

(b) Coast stations which transmit on a radio channel above 150 MHz and are located within interference range of any station within Canada or Mexico must minimize interference to the involved foreign station(s), and must notify the Commission of any station changes.

§ 80.71 Operating controls for stations on land.

Each coast station, Alaska-public fixed station and Alaska-private fixed station must provide operating controls in accordance with the following:

(a) Each station using telegraphy or telephony must be capable of changeover from transmission to reception and vice versa within two seconds excluding a change in operating radio channel.

(b) During it hours of service, each station must be capable of:

(1) Commencing operation within one minute after the need to do so occurs;

(2) Discontinuing all emission within five seconds after emission is no longer desired. The emission of an unattended station in an automated multistation system at which restoration to standby is automatic on conclusion of a call must be discontinued within three seconds of the disconnect signal or, if a disconnect signal is not received, within twenty seconds after reception of the final carrier transmission from a ship station.

(c) Each station using a multichannel installation for telegraphy must be capable of changing from one telegraphy channel to any other telegraphy channel within the same sub-band below 525 kHz within five seconds. This requirement need not be met by equipment intended for use only in emergencies and not used for normal communication.

(d) Every coast station using a multichannel installation for radiotelephony must be capable of changing from one telephony channel to another telephony channel within:

(1) Five seconds within the frequency band 1605-3500 kHz; or

(2) Three seconds within the band 156-162 MHz. This requirement also applies to marine utility stations.

§ 80.72 Antenna requirements for coast stations.

All emissions of a coast station a marine-utility station operated on shore using telephony within the frequency band 30-200 MHz must be vertically polarized.

§ 80.74 Public coast station facilities for a telephony busy signal.

A "busy" signal, when used by a public coast station in accordance with the provisions of § 80.111(d), must consist of the transmission of a single audio frequency regularly interrupted, as follows:

(a) *Audio frequency*: Not less than 100 nor more than 1100 Hertz, provided the frequency used for this purpose will not cause auto alarms or selective-ringing devices to be operated.

(b) *Rate of interruption*: 60 times per minute ± 10%.

(c) *Duration of each interruption*: 0.5 second ± 10%.

§ 80.76 Requirements for land station control points.

Each coast or fixed station subject to this part must have the following facilities:

(a) Except for marine utility stations, a visual indication of antenna current; or a pilot lamp, meter or equivalent device which provides continuous visual indication whenever the transmitter control circuits have been actuated.

(b) Capability to aurally monitor all transmissions originating at dispatch points and to disconnect the dispatch points from the transmitter or to terminate the operation of the transmitter.

(c) Facilities which will permit the responsible operator to turn the carrier of the radio transmitter on and off at will.

STATION REQUIREMENTS—SHIP STATIONS

§ 80.79 Inspection of ship station by a foreign Government.

The Governments or appropriate administrations of countries which a ship visits may require the license of the ship station or ship earth station to be produced for examination. When the license cannot be produced without delay or when irregularities are observed, Governments or administrations may inspect the radio installations to satisfy themselves that the installation conforms to the conditions imposed by the Radio Regulations.

perating controls for ship sta-

h control point must be capa-

rting and discontinuing oper-
he station;
nging frequencies within the
-band;
anging from transmission to
and vice versa.
he case of stations operating
56-162 MHz bands, reducing
tput to one watt or less in ac-
with § 80.215(e).[1]
h ship station using telegra-
be capable of changing from
transmission to telegraph
and vice versa without
witching.
n ship station using telepho-
be capable of changing from
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ship station using a multi-
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ship station and marine-
tion using a multi-channel

installation for telephony must be capable of changing from one radio channel to another within:

(1) Five seconds within the band 1605-3500 kHz; or

(2) Three seconds within the band 156-162 MHz.

(g)(1) Any telegraphy transmitter constructed since January 1, 1952, that operates in the band 405-525 kHz with an output power in excess of 250 watts must be capable of reducing the output power to 150 watts or less.

(2) The requirement of paragraph (g)(1) of this section does not apply when there is available in the same station a transmitter capable of operation on the international calling frequency 500 kHz and at least one working frequency within the band 405-525 kHz, capable of being energized by a source of power other than an emergency power source and not capable of an output in excess of 100 watts when operated on such frequencies.

[51 FR 31213, Sept. 2, 1986, as amended at 52 FR 35244, Sept. 18, 1987]

§ 80.81 Antenna requirements for ship stations.

All telephony emissions of a ship station or a marine utility station on board ship within the frequency band 30-200 MHz must be vertically polarized.

§ 80.83 Protection from potentially hazardous RF radiation.

Any license or renewal application for a ship earth station that will cause exposure to radiofrequency (RF) radiation in excess of the RF exposure guidelines specified in § 1.1307(b) of the Commission's Rules must comply with the environmental processing rules set forth in §§ 1.1301-1.1319 of this chapter.

[53 FR 28225, July 27, 1988]

OPERATING PROCEDURES—GENERAL

§ 80.86 International regulations applicable.

In addition to being regulated by these rules, the use and operation of stations subject to this part are governed by the Radio Regulations and the radio provisions of all other inter-

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tion transmitters, except hand-
ble transmitters, manufactured
ry 21, 1987 must automatically
carrier power to one watt or less
d to the frequency 156.375 MHz
MHz. All ship station transmit-
hand-held portable transmit-
ter January 21, 1997, must auto-
duce power as described above.
verride device must be provided
n held by the operator will
arrier power operation on chan-
97. Hand-held portable transmit-
e capable of reducing power to
t need not do so automatically.

national agreements in force to which the United States is a party.

§ 80.87 Cooperative use of frequency assignments.

Each radio channel is available for use on a shared basis only and is not available for the exclusive use of any one station or station licensee. Station licensees must cooperate in the use of their respective frequency assignments in order to minimize interference and obtain the most effective use of the authorized radio channels.

§ 80.88 Secrecy of communication.

The station licensee, the master of the ship, the responsible radio operators and any person who may have knowledge of the radio communications transmitted or received by a fixed, land, or mobile station subject to this part, or of any radiocommunication service of such station, must observe the secrecy requirements of the Communications Act and the Radio Regulations. See sections 501, 502, and 705 of the Communications Act and Article 23 of the Radio Regulations.

§ 80.89 Unauthorized transmissions.

Stations must not:

(a) Engage in superfluous radiocommunication.

(b) Use telephony on 243 MHz.

(c) Use selective calling on 2182 kHz or 156.800 MHz.

(d) When using telephony, transmit signals or communications not addressed to a particular station or stations. This provision does not apply to the transmission of distress, alarm, urgency, or safety signals or messages, or to test transmissions.

(e) When using telegraphy, transmit signals or communications not addressed to a particular station or stations, unless the transmission is preceded by CQ or CP or by distress, alarm, urgency, safety signals, or test transmissions.

(f) Transmit while on board vessels located on land. Vessels in the following situations are not considered to be on land for the purposes of this paragraph:

(1) Vessels which are aground due to a distress situation;

(2) Vessels in drydock undergoing repairs; and

(3) State or local government vessels which are involved in search and rescue operations including related training exercises.

(g) Transmit on frequencies or frequency bands not authorized on the current station license.

[51 FR 31213, Sept. 2, 1986, as amended at 52 FR 35244, Sept. 18, 1987]

§ 80.90 Suspension of transmission.

Transmission must be suspended immediately upon detection of a transmitter malfunction and must remain suspended until the malfunction is corrected, except for transmission concerning the immediate safety of life or property, in which case transmission must be suspended as soon as the emergency is terminated.

§ 80.91 Order of priority of communications.

(a) The order of priority of radiotelegraph communications is as follows:

(1) Distress calls including the international distress signal for radiotelegraphy, the international radiotelegraph alarm signal, the international radiotelephone alarm signal, distress messages and distress traffic.

(2) Communications preceded by the international radiotelegraph urgency signal.

(3) Communications preceded by the international radiotelegraphy safety signal.

(4) Communications relative to radio direction-finding bearings.

(5) Communications relative to the navigation and safe movement of aircraft.

(6) Communications relative to the navigation, movements, and needs of ships, including weather observation messages destined for an official meteorological service.

(7) Government communications for which priority right has been claimed.

(8) Service communications relating to the working of the radiocommunication service or to communications previously transmitted.

(9) All other communications.

(b) The order of priority of radiotelephone communications is as follows:

(1) Distress calls including the international distress signal for radiotelephony, the international radiotelephone alarm signal, distress messages and distress traffic.

(2) Communications preceded by the international radiotelephone urgency signal, or known to the station operator to consist of one or more urgent messages concerning the safety of a person, aircraft or other mobile unit.

(3) Communications preceded by the international radiotelephone safety signal, or known to the station operator to consist of one or more messages concerning the safety of navigation or important meteorological warnings.

(4) Communications known by the station operator to consist of one or more messages relative to the navigation, movements and needs of ships, including weather observation messages destined for an official meteorological service.

(5) Government communications for which priority right has been claimed.

(6) All other communications.

§ 80.92 Prevention of interference.

(a) The station operator must determine that the frequency is not in use by monitoring the frequency before transmitting, except for transmission of signals of distress.

(b) When a radiocommunication causes interference to a communication which is already in progress, the interfering station must cease transmitting at the request of either party to the existing communication. As between nondistress traffic seeking to commence use of a frequency, the priority is established under § 80.91.

(c) Except in cases of distress, communications between ship stations or between ship and aircraft stations must not interfere with public coast stations. The ship or aircraft stations which cause interference must stop transmitting or change frequency upon the first request of the affected coast station.

§ 80.93 Hours of service.

(a) *All stations.* All stations whose hours of service are not continuous must not suspend operation before having concluded all communication required in connection with a distress call or distress traffic.

(b) *Public coast stations.* (1) Each public coast station whose hours of service are not continuous must not suspend operation before having concluded all communication involving messages or calls originating in or destined to mobile stations within range and mobile stations which have indicated their presence.

(2) Unless otherwise authorized by the Commission upon adequate showing of need, each public coast station authorized to operate on frequencies in the 3000-23,000 kHz band must maintain continuous hours of service.

(c) *Compulsory ship stations.* Compulsory ship stations whose service is not continous may not suspend operation before concluding all traffic originating in or destined for public coast stations situated within their range and mobile stations which have indicated their presence.

(d) *Other than public coast or compulsory ship stations.* The hours of service of stations other than public coast or compulsory ship stations are determined by the station licensee.

§ 80.94 Control by coast or Government station.

When communicating with a coast station or any Government station in the maritime mobile service, ship stations must comply with the instruction given by the coast station or Government station relative to the order and time of transmission, the choice of frequency, the suspension of communication and the permissible type of message traffic that may be transmitted. This provision does not apply in the event of distress.

§ 80.95 Message charges.

(a) Charges must not be made for service of:

(1) Any public coast station unless tariffs for the service are on file with the Commission;

(2) Any station other than a public coast station or an Alaska—public fixed station, except cooperatively shared stations covered by § 80.503;

(3) Distress calls and related traffic; and

(4) Navigation hazard warnings preceded by the SAFETY signal.

(b) The licensee of each ship station is responsible for the payment of all charges accruing to any other station(s) or facilities for the handling or forwarding of messages or communications transmitted by that station.

(c) In order to be included in the ITU List of Coast Stations public coast stations must recognize international Accounting Authority Identification Codes (AAIC) for purposes of billing and accounts settlement in accordance with Article 66 of the Radio Regulations. Stations which elect not to recognize international AAIC's will be removed from the ITU List of Coast Stations.

[51 FR 31213, Sept. 2, 1986, as amended at 52 FR 35244, Sept. 18, 1987]

§ 80.96 Maintenance tests.

Stations are authorized to engage in test transmissions necessary for maintenance of the station. Test transmissions must conform to appropriate test operating procedures.

§ 80.97 Radiotelegraph operating procedures.

This section applies to ships and coast stations authorized to transmit in the band 405-525 kHz.

(a) Except for the transmission of distress or urgency signals, all transmissions must cease within the band 485-515 kHz during each 500 kHz silence period.

(b) Stations transmitting telegraphy must use the service abbreviations ("Q" code) listed in Appendix 14 to the Radio Regulations.

(c) The call consists of:

(1) The call sign of the station called, not more than twice; the word "DE" and the call sign of the calling station, not more than twice; if useful, the frequency on which the called station should reply; and the letter "K".

(2) If the call is transmitted twice at an interval of not less than one minute, it must not be repeated until after an interval of three minutes.

(d) The reply to calls consists of: The call sign of the calling station, not more than twice; the word "DE"; and the call sign of the station called, onc only.

§ 80.98 Radiotelegraph testing procedure

(a) Stations authorized to use telegraphy may conduct tests on any assigned frequency. Emissions must no cause harmful interference. When radiation is necessary the radiotelegraph testing procedure described in thi paragraph must be followed:

(1) The operator must not interfer with transmissions in progress.

(2) The operator must transmit "IE (two dots, space, one dot) on the tes frequency as a warning that test emissions are about to be made. When th frequency of the test emission i within the frequency band 405-52 kHz, a watch must be maintained o 500 kHz throughout the test period.

(3) If any station transmits "AS (wait), testing must be suspended. When transmission of "IE" is resumed and no response is heard, the test may proceed.

(4) Test signals composed of a series of "VVV" having a duration of not more than ten seconds, followed by the call sign of the testing station will be transmitted. The call sign must be sent clearly at a speed of approximately 10 words per minute. This test transmission must not be repeated until a period of at least one minute has elapsed. On 500 kHz in a region of heavy traffic, at least five minutes must elapse before the test transmission is repeated.

(b) When testing is conducted on 500 kHz, no tests will be conducted during the 500 kHz silence periods. Care must be exercised not to so prolong and space the dash portion of the "VVV" series as to form the alarm signal.

(c) When testing is conducted on any frequency in the band 8362-8366 kHz tests must not actuate any automatic alarm receiver.

§ 80.99 Radiotelegraph station identification.

This section applies to coast, ship and survival craft stations authorized to transmit in the band 405-525 kHz.

(a) The station transmitting radiotelegraph emissions must be identified by its call sign. The call sign must be transmitted with the telegraphy emission normally used by the station. The call sign must be transmitted at 20 minute intervals when transmission is sustained for more than 20 minutes. When a ship station is exchanging public correspondence communications, the identification may be deferred until completion of each communication with any other station.

(b) The requirements of this section do not apply to survival craft stations when transmitting distress signals automatically or when operating on 121.500 MHz for radiobeacon purposes.

(c) Emergency position indicating radiobeacon stations do not require identification.

§ 80.100 Morse code requirement.

The code employed for telegraphy must be the Morse code specified in the Telegraph Regulations annexed to the International Telecommunication Convention. Pertinent extracts from the Telegraph Regulations are contained in the "Manual for Use by the Maritime Mobile and Maritime Mobile-Satellite Services" published by the International Telecommunication Union.

§ 80.101 Radiotelephone testing procedures.

This section is applicable to all stations using telephony except where otherwise specified.

(a) Station licensees must not cause harmful interference. When radiation is necessary or unavoidable, the testing procedure described below must be followed:

(1) The operator must not interfere with transmissions in progress.

(2) The testing station's call sign, followed by the word "test", must be announced on the radio-channel being used for the test.

(3) If any station responds "wait", the test must be suspended for a minimum of 30 seconds, then repeat the call sign followed by the word "test" and listen again for a response. To continue the test, the operator must use counts or phrases which do not conflict with normal operating signals, and must end with the station's call sign. Test signals must not exceed ten seconds, and must not be repeated until at least one minute has elapsed. On the frequency 2182 kHz or 156.800 MHz, the time between tests must be a minimum of five minutes.

(b) Testing of transmitters must be confined to single frequency channels on working frequencies. However, 2182 kHz and 156.800 MHz may be used to contact ship or coast stations as appropriate when signal reports are necessary. Short tests on 2182 kHz by vessels with DSB (A3) equipment for distress and safety purposes are permitted to evaluate the compatibility of that equipment with an A3J emission system. U.S. Coast Guard stations may be contacted on 2182 kHz or 156.800 MHz for test purposes only when tests are being conducted during inspections by Commission representatives, when qualified radio technicians are installing or repairing the station radiotelephone equipment, or when qualified ship's personnel conduct an operational check requested by the U.S. Coast Guard. In these cases the test must be identified as "FCC" or "technical".

(c) Survival craft transmitter tests must not be made within actuating range of automatic alarm receivers. Survival craft transmitters must not be tested on the frequency 500 kHz during the silence periods.

§ 80.102 Radiotelephone station identification.

This section applies to all stations using telephony which are subject to this part.

(a) Except as provided in paragraphs (d) and (e) of this section, stations must give the call sign in English. Identification must be made:

(1) At the beginning and end of each communication with any other station.

(2) At 15 minute intervals when transmission is sustained for more than 15 minutes. When public correspondence is being exchanged with a ship or aircraft station, the identification may be deferred until the completion of the communications.

(b) Private coast stations located at drawbridges and transmitting on the navigation frequency 156.650 MHz may identify by use of the name of the bridge in lieu of the call sign.

(c) Ship stations transmitting on any authorized VHF bridge-to-bridge channel may be identified by the name of the ship in lieu of the call sign.

(d) Ship stations operating in a vessel traffic service system or on a waterway under the control of a U.S. Government agency or a foreign authoriy, when communicating with such an agency or authority may be identified by the name of the ship in lieu of the call sign, or as directed by the agency or foreign authority.

(e) VHF public coast station may identify by means of the approximate geographic location of the station or the area it serves when it is the only VHF public coast station serving the location or there will be no conflict with the identification of any other station.

[51 FR 31213, Sept. 2, 1986, as amended at 52 FR 35244, Sept. 18, 1987]

§ 80.103 Digital selective calling (DSC) operating procedures.

(a) Operating procedures for the use of DSC equipment in the maritime mobile service are as contained in CCIR Recommendation 541 as modified by paragraph (c) of this section.

(b) When using DSC techniques, coast and ship stations must use nine digit maritime mobile service identities.

(c) DSC acknowledgement of DSC distress and safety calls must be made by designated coast stations and such acknowledgement must be in accordance with procedures contained in CCIR Recommendation 541. Nondesignated public and private coast stations must follow the guidance provided for ship stations in CCIR Recommendation 541 with respect to DSC "Acknowledgement of distress calls" and "Distress relays".

§ 80.104 Identification of radar transmissions not authorized.

This section applies to all maritime radar transmitters except radar beacon stations.

(a) Radar transmitters must not transmit station identification.

OPERATING PROCEDURES—LAND STATIONS

§ 80.105 General obligations of coast stations.

Each coast station or marine-utility station must acknowledge and receive all calls directed to it by ship or aircraft stations. Such stations are permitted to transmit safety communication to any ship or aircraft station.

§ 80.106 Intercommunication in the mobile service.

(a) Each public coast station must exchange radio communications with any ship or aircraft station at sea; and each station on shipboard or aircraft at sea must exchange radio communications with any other station on shipboard or aircraft at sea or with any public coast station.

(b) Each public coast station must acknowledge and receive all communications from mobile stations directed to it, transmit all communications delivered to it which are directed to mobile stations within range in accordance with their tariffs. Discrimination in service is prohibited.

§ 80.107 Service of private coast stations and marine-utility stations.

A private coast station or a marine-utility station is authorized to transmit messages necessary for the private business and operational needs of ships and the safety of aircraft.

§ 80.108 Transmission of traffic lists by coast stations.

(a) Each coast station is authorized to transmit lists of call signs in alphabetical order of all mobile stations for which they have traffic on hand. These traffic lists will be transmitted on the station's normal working frequencies at intervals of:

(1) In the case of telegraphy, at least two hours and not more than four hours during the working hours of the coast station.

(2) In the case of radiotelephony, at least one hour and not more than four hours during the working hours of the coast station.

(b) The announcement must be as brief as possible and must not be reeated more than twice. Coast stations nay announce on a calling frequency nat they are about to transmit call sts on a specific working frequency.

80.109 Transmission to a plurality of mobile stations by a public coast station.

Group calls to vessels under the mmon control of a single entity and formation for the general benefit of ariners including storm warnings, or- nary weather, hydrographic infor- ation and press materials may be ansmitted by a public coast station nultaneously to a plurality of mobile ations.

0.110 Inspection and maintenance of tower markings and associated control equipment.

he licensee of any radio station ich has an antenna structure re- ired to be painted or illuminated rsuant to the provisions of section 3(q) of the Communications Act st operate and maintain the tower rking and associated control equip- nt in accordance with Part 17 of s chapter.

.111 Radiotelephone operating procedures for coast stations.

his section applies to all coast sta- s using telephony which are sub- to this part.

) *Limitations on calling.* (1) ept when transmitting a general to all stations for announcing or eding the transmission of distress, ency, or safety messages, a coast ion must call the particular ion(s) with which it intends to municate.

Coast stations must call ship sta- s by voice unless it is known that particular ship station may be con- d by other means such as auto- c actuation of a selective ringing lling device.

Coast stations may be authorized sion for selective calling on each ing frequency.

Calling a particular station must continue for more than one te in each instance. If the called n does not reply, that station not again be called for two min- When a called station does not reply to a call sent three times at intervals of two minutes, the calling must cease for fifteen minutes. However, if harmful interference will not be caused to other communications in progress, the call may be repeated after three minutes.

(5) A coast station must not attempt to communicate with a ship station that has specifically called another coast station until it becomes evident that the called station does not answer, or that communication between the ship station and the called station cannot be carried on because of unsatisfactory operating conditions.

(6) Calls to establish communication must be initiated on an available common working frequency when such a frequency exists and it is known that the called ship maintains a simultaneous watch on the common working frequency and the appropriate calling frequency(ies).

(b) *Time limitation on calling frequency.* Transmissions by coast stations on 2182 kHz or 156.800 MHz must be minimized and any one exchange of communications must not exceed one minute in duration.

(c) *Change to working frequency.* After establishing communications with another station by call and reply on 2182 kHz or 156.800 MHz coast stations must change to an authorized working channel for the transmission of messages.

(d) *Use of busy signal.* A coast station, when communicating with a ship station which transmits to the coast station on a radio channel which is a different channel from that used by the coast station for transmission, may transmit a "busy" signal whenever transmission from the ship station is being received. The characteristics of the "busy" signal are contained in § 80.74.

[51 FR 31213, Sept. 2, 1986, as amended at 52 FR 35244, Sept. 18, 1987]

OPERATING PROCEDURES—SHIP STATIONS

§ 80.114 Authority of the master.

(a) The service of each ship station must at all times be under the ultimate control of the master, who must require that each operator or such station comply with the Radio Regulations in force and that the ship station is used in accordance with those regulations.

(b) These rules are waived when the vessel is under the control of the U.S. Government.

§ 80.115 Operational conditions for use of associated ship units.

(a) Associated ship units may be operated under a ship station authorization. Use of an associated ship unit is restricted as follows;

(1) It must only be operated on the safety and calling frequency 156.800 MHz or on commercial or noncommercial VHF intership frequencies appropriate to the class of ship station with which it is associated.

(2) Except for safety purposes, it must only be used to communicate with the ship station with which it is associated or with associated ship units of the same ship station. Such associated ship units may not be used from shore.

(3) It must be equipped to transmit on the frequency 156.800 MHz and at least one appropriate intership frequency.

(4) Calling must occur on the frequency 156.800 MHz unless calling and working on an intership frequency has been prearranged.

(5) Power is limited to one watt.

(6) The station must be identified by the call sign of the ship station with which it is associated and an appropriate unit designator.

(b) State or local government vehicles used to tow vessels involved in search and rescue operations are authorized to operate on maritime mobile frequencies as associated ship units. Such operations must be in accordance with paragraph (a) of this section, except that the associated ship unit: May be operated from shore; may use Distress, Safety and Calling, Intership Safety, Liaison, U.S. Coast Guard, or Maritime Control VHF intership frequencies; and may have a transmitter power of 25 watts.

§ 80.116 Radiotelephone operating procedures for ship stations.

(a) *Calling coast stations.* (1) Use by ship stations of the freqency 2182 kHz for calling coast stations and for replying to calls from coast stations is authorized. However, such calls and replies should be on the appropriate ship-shore working frequency.

(2) Use by ship stations and marine utility stations of the frequency 156.800 MHz for calling coast stations and marine utility stations on shore, and for replying to calls from such stations, is authorized. However, such calls and replies should be made on the appropriate ship-shore working frequency.

(b) *Calling ship stations.* (1) Except when other operating procedure is used to expedite safety communication, ship stations, before transmitting on the intership working frequencies 2003, 2142, 2638, 2738, or 2830 kHz, must first establish communications with other ship stations by call and reply on 2182 kHz. Calls may be initiated on an intership working frequency when it is known that the called vessel maintains a simultaneous watch on the working frequency and on 2182 kHz.

(2) Except when other operating procedures are used to expedite safety communications, the frequency 156.800 MHz must be used for call and reply by ship stations and marine utility stations before establishing communication on one of the intership working frequencies. Calls may be initiated on an intership working frequency when it is known that the called vessel maintains a simultaneous watch on the working frequency and on 156.800 MHz.

(c) *Change to working frequency.* After establishing communication with another station by call and reply on 2182 kHz or 156.800 MHz stations on board ship must change to an authorized working frequency for the transmission of messages.

(d) *Limitations on calling.* Calling a particular station must not continue for more than 30 seconds in each instance. If the called station does not reply, the station must not again be called until after an interval of 2 minutes. When a called station called does not reply to a call sent three times at intervals of 2 minutes, the calling must cease and must not be renewed until after an interval of 15 minutes; however, if there is no reason to believe that harmful interference will be caused to other communications in progress, the call sent three times at intervals of 2 minutes may be repeated after a pause of not less than 3 minutes. In event of an emergency involving safety, the provisions of this paragraph do not apply.

(e) *Limitations on working.* Any one exchange of communications between any two ship stations on 2003, 2142, 2638, 2738, or 2830 kHz or between a ship station and a private coast station on 2738 or 2830 kHz must not exceed 3 minutes after the stations have established contact. Subsequent to such exchange of communications, the same two stations must not again use 2003, 2142, 2638, 2738, or 2830 kHz for communication with each other until 10 minutes have elapsed.

(f) *Transmission limitation on 2182 kHz and 156.800 MHz.* To facilitate the reception of distress calls, all transmissions on 2182 kHz and 156.800 MHz (channel 16) must be minimized and transmissions on 156.800 MHz must not exceed 1 minute.

(g) *Limitations on commercial communication.* On frequencies in the band 156-162 MHz, the exchange of commercial communication must be limited to the minimum practicable transmission time. In the conduct of ship-shore communication other than distress, stations on board ship must comply with instructions given by the private coast station or marine utility station on shore with which they are communicating.

(h) *2182 kHz silence periods.* To facilitate the reception of distress calls, transmission by ship or survival craft stations is prohibited on any frequency (including 2182 kHz) within the band 2173.5-2190.5 kHz during each 2182 kHz silence period.

SPECIAL PROCEDURES—PUBLIC COAST STATIONS

§ 80.121 Public coast stations using telegraphy.

(a) *Narrow-band direct-printing (NB-DP) operating procedures.* (1) When both terminals of the NB-DP circuit are satisfied that the circuit is in operable condition, the message preamble must be transmitted in the following format:

(i) One carriage return and one line feed,

(ii) Serial number or number of the message,

(iii) The name of the office of origin,

(iv) The number of words,

(v) The date of handing in of the message,

(vi) The time of handing in of the message, and

(vii) Any service instructions. (See The ITU "Manual for Use by the Maritime Mobile and Maritime Mobile-Satellite Services".)

(2) Upon completion of transmission of the preamble, the address, text and signature must be transmitted as received from the sender.

(3) Upon completion of transmission of the signature the coast station must, following the signal "COL", routinely repeat all service indications in the address and for figures or mixed groups of letters, figures or signs in the address, text or signature.

(4) In telegrams of more than 50 words, routine repetition must be given at the end of each page.

(5) Paragraphs (a) (1) through (4) of this section need not be followed when a direct connection is employed.

(6) In calling ship stations by narrow-band direct-printing, the coast station must use the ship station selective calling number (5 digits) and its assigned coast station identification number (4 digits). Calls to ship stations must employ the following format: Ship station selective call number, repeated twice; "DE", sent once; and coast station identification number, repeated twice. When the ship station does not reply to a call sent three times at intervals of two minutes, the calling must cease and

must not be renewed until after an interval of fifteen minutes.

(7) A public coast station authorized to use NB-DP frequencies between 4000 kHz and 27500 kHz may use class A1A emission on the "mark" frequency for station identification and for establishing communications with ship stations. The radio station license must reflect authority for this type of operation, and harmful interference must not be caused.

(b) *Watch on ship calling frequencies.* (1) Public coast stations using telegraphy must maintain a continuous watch during their working hours for calls from ship stations on frequencies in the same band(s) in which the coast station is licensed to operate. See subpart H of this part.

(2) Such station must employ receivers which are capable of being accurately set to any designated calling frequency in each band for which the receiver is intended to operate. The time required to set the receiver to a frequency must not exceed five seconds. The receiver must have a long term frequency stability of not more than 50 Hz and a minimum sensitivity of two microvolts across receiver input terminals of 50 ohms, or equivalent. The audio harmonic distortion must not exceed five percent at any rated output power.

(c) *Radiotelegraph frequencies.* Radiotelegraph frequencies available for assignment to public coast stations are contained in subpart H of this part.

§ 80.122 Public coast stations using facsimile.

Facsimile operations are a form of telegraphy for the transmission and receipt of fixed images between authorized coast and ship stations in accordance with the following paragraphs.

(a) *Supplemental eligibility requirements.* Public coast stations are eligible to use facsimile techniques with ship stations.

(b) *Assignment and use of frequencies.* (1) For the purpose of providing facsimile communications with ship stations, public coast stations will request frequencies from the bands 2000-27500 kHz listed in Part 2 of this chapter which are available for shared use by the maritime mobile service and other radio services.

(2) Equipment used for facsimile operations is subject to the applicable provisions of subpart E of this part.

(3) The use of voice on frequencies authorized for facsimile operations is limited to set-up and confirmation of receipt of facsimile transmissions.

SPECIAL PROCEDURES—PRIVATE COAST STATIONS

§ 80.131 Radioprinter operations.

Radioprinter operations provide a relatively low cost system of record communications between authorized coast and ship stations in accordance with the following paragraphs.

(a) *Supplementary eligibility requirement.* A radioprinter authorization for a private coast station may be issued to the owner or operator of a ship of less than 1600 gross tons, a community of ships all of which are less than 1600 gross tons, or an association whose members operate ships of less than 1600 gross tons.

(b) *Scope of communications.* Only those communications which concern the business and operational needs of vessels are authorized.

(c) *Assignment and use of frequencies.* (1) Frequencies may be assigned to private coast stations for radioprinter use from the appropriate bands listed in subpart H of this part.

(2) Frequencies in the listed bands are shared with other radio services including the maritime mobile service. Each assigned frequency is available on a shared use basis only, not for the exclusive use of any one station or licensee.

(d) *Coast station responsibilities.* (1) Private coast stations must propose frequencies and provide the names of ships to be served with the application.

(2) Private coast station licensees must provide copies of their license to all ships with which they are authorized to conduct radioprinter operations.

SPECIAL PROCEDURES—SHIP STATIONS

§ 80.141 General provisions for ship stations.

(a) *Points of communication.* Ship stations and marine utility stations on board ships are authorized to communicate with any station in the maritime mobile service.

(b) *Service requirements for all ship stations.* (1) Each ship station must receive and acknowledge all communications which are addressed to the ship or to any person on board.

(2) Every ship, on meeting with any direct danger to the navigation of other ships such as ice, a derelict vessel, a tropical storm, subfreezing air temperatures associated with gale force winds causing severe icing on superstructures, or winds of force 10 or above on the Beaufort scale for which no storm warning has been received, must transmit related information to ships in the vicinity and to the authorities on land unless such action has already been taken by another station. All such radio messages must be preceded by the safety signal.

(3) A ship station may accept communications for retransmission to any other station in the maritime mobile service. Whenever such messages or communications have been received and acknowledged by a ship station for this purpose, that station must retransmit the message as soon as possible.

(c) *Service requirements for vessels.* Each ship station provided for compliance with Part II of Title III of the Communications Act must provide a public correspondence service on voyages of more than 24 hours for any person who requests the service.

(1) Compulsory radiotelegraph ships must provide this service during the hours the radio operator is normally on duty.

(2) Compulsory radiotelephone ships must provide this service for at least four hours daily. The hours must be prominently posted at the principal operating location of the station.

§ 80.142 Ships using radiotelegraphy.

(a) *Calling by narrow-band direct-printing.* (1) NB-DP ship stations must call United States public coast stations on frequencies designated for NB-DP operation.

(2) Where it is known that the coast station maintains a watch on working frequencies for ship station NB-DP calls the ship station must make its initial NB-DP call on those frequencies.

(3) Calls to a coast station or other ship station must employ the following format: Coast station identification number, repeated twice; "DE", sent once; and ship station selective call number, repeated twice. When the coast station does not reply to a call sent three times at intervals of two minutes, the calling must cease for fifteen minutes.

(b) *NB-DP operating procedure.* The operation of NB-DP equipment in the maritime mobile service must be in accordance with the operating procedures contained in the latest version of CCIR Recommendation 492 that does not prevent the use of existing equipment.

(c) *Required channels for radiotelegraphy.* (1) Each ship station using telegraphy on frequencies within the band 405-525 kHz must be capable of:

(i) Transmit and receive on 500 kHz using the authorized emissions, and

(ii) Transmit on at least two working frequencies and receive on all other frequencies necessary for their service using authorized emissions, and

(iii) When a radiotelegraph installation is compulsory, a fourth frequency within this band which is authorized specifically for direction finding must also be provided.

(2) Each ship station using telegraphy on frequencies within the band 90-160 kHz must be capable of transmitting and receiving Class A1A emission on the frequency 143 kHz, and on at least two additional working frequencies within this band except that portion between 140 kHz and 146 kHz.

(3) Each ship station using telegraphy and operating in the bands between 4000-27500 kHz must be capable of transmitting and receiving Class A1A or J2A emission on at least one frequency authorized for calling and at least two frequencies authorized for working in each of the bands for which facilities are provided to carry on its service.

(4) Each ship station using telegraphy in Region 2 on frequencies within the band 2065-2107 kHz must be capable of transmitting and receiving Class A1A or J2A emission on at least one frequency in this band authorized for working in addition to a frequency in this hand authorized for calling.

[51 FR 31213, Sept. 2, 1986, as amended at 54 FR 49993, Dec. 4, 1989]

§ 80.143 Required frequencies for radiotelephony.

(a) Except for compulsory vessels, each ship radiotelephone station licensed to operate in the band 1605-3500 kHz must be able to receive and transmit J3E emission on the frequency 2182 kHz. Ship stations are additionally authorized to receive and transmit H3E emission for communications with foreign coast stations and with vessels of foreign registry. If the station is used for other than safety communications, it must be capable also of receiving and transmitting the J3E emission on at least two other frequencies in that band. However, ship stations which operate exclusively on the Mississippi River and its connecting waterways, and on high frequency bands above 3500 kHz, need be equipped with 2182 kHz and one other frequency within the band 1605-3500 kHz. Additionally, use of A3E emission is permitted for distress and safety purposes on 2182 kHz for portable survival craft equipment also having the capability to operate on 500 kHz and for transmitters authorized for use prior to January 1, 1972.

(b) Except as provided in paragraph (c) of this section, at least one VHF radiotelephone transmitter/receiver must be able to transmit and receive on the following frequencies:

(1) The distress, safety and calling frequency 156.800 MHz;

(2) The primary intership safety frequency 156.300 MHz;

(3) One or more working frequencies; and

(4) All other frequencies necessary for its service.

(c) Where a ship ordinarily has no requirement for VHF communications, handheld VHF equipment may be used solely to comply with the bridge-to-bridge navigational communication requirements contained in subpart U of this part.

[51 FR 31213, Sept. 2, 1986, as amended at 52 FR 35244, Sept. 18, 1987]

§ 80.145 Class C EPIRB operational procedures.

Class C EPIRBs must be used for distress purposes only after use of the VHF/FM radiotelephone installation, in accordance with § 80.320, has proved unsuccessful or when a VHF/FM radiotelephone installation is not fitted, or when specifically requested to do so by a station engaged in search and rescue operations.

SHIPBOARD GENERAL PURPOSE WATCHES

§ 80.146 Watch on 500 kHz.

During their hours of service, ship stations using frequencies in the authorized bands between 405-525 kHz must, remain on watch on 500 kHz except when the operator is transmitting on 500 kHz or operating on another frequency. The provisions of this section do not relieve the ship from complying with the requirements for a safety watch as prescribed in §§ 80.304 and 80.305.

§ 80.147 Watch on 2182 kHz.

Ship stations must maintain a watch on 2182 kHz as prescribed by § 80.304(b).

§ 80.148 Watch on 156.8 MHz (Channel 16).

Each VHF ship station, or if more than one VHF ship station is being operated from a vessel (for example, if a pilot is operating his radio equipment on board the vessel), then at least one VHF ship station per vessel must during its hours of service maintain a watch on 156.800 MHz whenever such station is not being used for exchanging communications. The watch is not required:

(a) Where a ship station is operating only with handheld bridge-to-bridge VHF radio equipment under § 80.143(c) of this part;

(b) For vessels subject to the Bridge-to-Bridge Act and participating in a Vessel Traffic Service (VTS) system when the watch is maintained on both the bridge-to-bridge frequency and a separately assigned VTS frequency; or

(c) For a station on board a voluntary vessel equipped with digital selective calling (DSC) equipment, maintaining a continuous DSC watch on 156.525 MHz whenever such station is not being used for exchanging communications, and while such station is within the VHF service area of a U.S. Coast Guard radio facility which is DSC equipped.

VIOLATIONS

§ 80.149 Answer to notice of violation.

(a) Any person receiving official notice of violation of the terms of the Communications Act, any legislative act, executive order, treaty to which the United States is a party, terms of a station or operator license, or the rules and regulations of the Federal Communications Commission must within 10 days from such receipt, send a written answer, in duplicate, to the office of the Commission originating the official notice. If an answer cannot be sent or an acknowledgment made within such 10-day period by reason of illness or other unavoidable circumstances, acknowledgment and answer must be made at the earliest practicable date with a satisfactory explanation of the delay. The answer to each notice must be complete in itself and must not be abbreviated by references to other communications or answers to other notices. The answer must contain a full explanation of the incident involved and must set forth the action taken to prevent a continuation or recurrence. If the notice relates to lack of attention to or improper operation of the station or to log or watch discrepancies, the answer must give the name and license number of the licensed operator on duty.

(b) When an official notice of violation, impending violation, or discrepancy, pertaining to any provision of Part II of Title III of the Communications Act or the radio provisions of the Safety Convention, is served upon the master or person responsible for a vessel and any instructions appearing on such document issued by a representative of the Commission are at variance with the content of paragraph (a) of this section, the instructions issued by the Commission's representative supersede those set forth in paragraph (a) of this section.

Subpart D—Operator Requirements

§ 80.151 Classification of operator licenses and endorsements.

(a) Commercial radio operator licenses issued by the Commission are classified in accordance with the Radio Regulations of the International Telecommunication Union.

(b) The following licenses are issued by the Commission. International classification, if different from the license name, is given in parentheses. The licenses and their alphanumeric designator are listed in descending order.

(1) T-1. First Class Radiotelegraph Operator's Certificate.

(2) T-2. Second Class Radiotelegraph Operator's Certificate.

(3) G. General Radiotelephone Operator License (radiotelephone operator's general certificate).

(4) T-3. Third Class Radiotelegraph Operator's Certificate (radiotelegraph operator's special certificate).

(5) MP. Marine Radio Operator Permit (radiotelephone operator's restricted certificate).

(6) RP. Restricted Radiotelephone Operator Permit (radiotelephone operator's restricted certificate).

(c) The following license endorsements are affixed by the Commission to provide special authorizations or restrictions. Applicable licenses are given in parentheses.

(1) Ship Radar endorsement (First and Second Class Radiotelegraph Operator's Certificate, General Radiotelephone Operator License).

(2) Six Months Service endorsement (First and Second Class Radiotelegraph Operator's Certificate).

(3) Restrictive endorsements; relating to physical handicaps, English language or literacy waivers, or other matters (all licenses).

COAST STATION OPERATOR REQUIREMENTS

§ 80.153 Coast station operator requirements.

(a) Except as provided in § 80.179, operation of a coast station transmitter must be performed by a person holding a commercial radio operator license of the required class, who is on duty at the control point of the station. The operator is responsible for the proper operation of the station.

(b) The minimum class of radio operator license required for operation of each specific classification of station is set forth below:

Minimum Operator License

Public coast telegraph, all classes—T-2.

—Manual Morse under supervision of T1 or T2—T-3.

—NB-DP under supervision of T1 or T2—T-3, G or MP.

Coast telephone, all classes:

—Exceeding 250 watts carrier power or 1,500 watts peak envelope power—T-2 or G.

Except in Alaska regional and local area stations—T-3, G or MP.

—250 watts or less carrier power or 1,500 watts or less peak envelope power operating on frequencies below 30 MHz—T-3, G or MP.

Except in Alaska—None.

—250 watts or less carrier power operating on frequencies above 30 MHz—None.

(c) *Special Operating Conditions*: (1) When a coast telephone station of any class is used to transmit manual telegraphy the telegraph key operator must hold a third-class or higher radiotelegraph operator's license.

(2) An operational fixed station associated with a coast station may be operated by the operator of the associated coast station.

[51 FR 31213, Sept. 2, 1986, as amended at 54 FR 10008, Mar. 9, 1989; 54 FR 40058, Sept. 29, 1989]

SHIP STATION OPERATOR REQUIREMENTS

§ 80.155 Ship station operator requirements.

Except as provided in §§ 80.177 and 80.179, operation of transmitters of any ship station must be performed by a person holding a commercial radio operator license or permit of the class required below. The operator is responsible for the proper operation of the station.

[54 FR 10008, Mar. 9, 1989]

§ 80.156 Control by operator.

The operator on board ships required to have a holder of a commercial operator license or permit on board may, if authorized by the station licensee or master, permit an unlicensed person to modulate the transmitting apparatus for all modes of communication except Morse code radiotelegraphy.

[51 FR 34984, Oct. 1, 1986]

§ 80.157 Radio officer defined.

A *radio officer* means a person holding a first or second class radiotelegraph operator's certificate issued by the Commission who is employed to operate a ship radio station in compliance with Part II of Title III of the Communications Act. Such a person is also required to be licensed as a *radio officer* by the U.S. Coast Guard when employed to operate a ship radiotelegraph station.

[53 FR 46455, Nov. 17, 1988]

§ 80.159 Operator requirements of Title III of the Communications Act and the Safety Convention.

(a) Each telegraphy passenger ship equipped with a radiotelegraph station in accordance with Part II of Title III of the Communications Act must carry one radio officer holding a first or second class radiotelegraph operator's certificate and a second radio officer holding either a first or second class radiotelegraph operator's certificate. The holder of a second class radiotelegraph operator's certificate may not act as the chief radio officer.

(b) Each cargo ship equipped with a radiotelegraph station in accordance with Part II of Title III of the Communications Act and which has a radiotelegraph auto alarm must carry a radio officer holding a first or second class radiotelegraph operator's certificate who has had at least six months service as a radio officer on board U.S. ships. If the radiotelegraph station does not have an auto alarm, a second radio officer who holds a first or second class radiotelegraph operator's certificate must be carried.

(c) Each cargo ship equipped with a radiotelephone station in accordance with Part II of Title III of the Communications Act must carry a radio operator who meets the following requirements:

(1) Where the station power does not exceed 1500 watts peak envelope power, the operator must hold a marine radio operator permit or higher class license.

(2) Where the station power exceeds 1500 watts peak envelope power, the operator must hold a general radiotelephone radio operator license or higher class license.

(d) Each ship transporting more han six passengers for hire equipped vith a radiotelephone station in accordance with Part III of Title III of he Communications Act must carry a adio operator who meets the followng requirements:

(1) Where the station power does ot exceed 250 watts carrier power or 500 watts peak envelope power, the adio operator must hold a marine adio operator permit or higher class cense.

(2) Where the station power exceeds 50 watts carrier power or 1500 watts eak envelope power, the radio operaor must hold a general radiotelehone operator license or higher class cense.

1 FR 31213, Sept. 2, 1986, as amended at FR 40058, Sept. 29, 1989]

80.161 Operator requirements of the Great Lakes Radio Agreement.

Each ship subject to the Great akes Radio Agreement must have on oard an officer or member of the ew who holds a marine radio operar permit or higher class license.

0.163 Operator requirements of the Bridge-to-Bridge Act.

Each ship subject to the Bridge-toidge Act must have on board a radio erator who holds a restricted radioephone operator permit or higher ss license.

§ 80.165 Operator requirements for voluntary stations.

Minimum operator license

Ship Morse telegraph	T-2.
Ship direct-printing telegraph	MP.
Ship telephone, more than 250 watts carrier power or 1,000 watts peak envelope power.	G.
Ship telephone, not more than 250 watts carrier power or 1,000 watts peak envelope power.	MP.
Ship telephone, not more than 100 watts carrier power or 400 watts peak envelope power:	
Above 30 MHz	None.[1]
Below 30 MHz	RP.
Ship earth station	RP.

[1] RP required for international voyage.

GENERAL OPERATOR REQUIREMENTS

§ 80.167 Limitations on operators.

The operator of maritime radio equipment other than T-1, T-2, or G licensees, must not:

(a) Make equipment adjustments which may affect transmitter operation;

(b) Operate any transmitter which requires more than the use of simple external switches or manual frequency selection or transmitters whose frequency stability is not maintained by the transmitter itself.

§ 80.169 Operators required to adjust transmitters or radar.

(a) All adjustments of radio transmitters in any radiotelephone station or coincident with the installation, servicing, or maintenance of such equipment which may affect the proper operation of the station, must be performed by or under the immediate supervision and responsibility of a person holding a first or second class radiotelegraph operator's certificate or a general radiotelephone operator license.

(b) Only persons holding a first or second class radiotelegraph operator certificate must perform such functions at radiotelegraph stations transmitting Morse code.

(c) Only persons holding an operator certificate containing a ship radar endorsement must perform such functions on radar equipment.

[51 FR 31213, Sept. 2, 1986, as amended at 54 FR 40058, Sept. 29, 1989]

§ 80.175 Availability of operator licenses.

All operator licenses required by this subpart must be readily available for inspection.

§ 80.177 When operator license is not required.

(a) No radio operator authorization is required to operate:

(1) A shore radar, a shore radiolocation, maritime support or shore radionavigation station;

(2) A survival craft station or an emergency position indicating radio beacon;

(3) A ship radar station if:

(i) The radar frequency is determined by a nontunable, pulse type magnetron or other fixed tuned device, and

(ii) The radar is capable of being operated exclusively by external controls;

(4) An on board station; or

(5) A ship station operating in the VHF band on board a ship voluntarily equipped with radio and sailing on a domestic voyage.

(b) No radio operator license is required to install a VHF transmitter in a ship station if the installation is made by, or under the supervision of, the licensee of the ship station and if modifications to the transmitter other than front panel controls are not made.

(c) No operator license is required to operate coast stations of 250 watts or less carrier power or 1500 watts or less peak envelope power operating on frequencies above 30 MHz, or marine utility stations.

(d) No radio operator license is required to install a radar station on a voluntarily equipped ship when a manual is included with the equipment that provides step-by-step instructions for the installation, calibration, and operation of the radar. The installation must be made by, or under the supervision of, the licensee of that ship station and no modifications or adjustments other than to the front panel controls are to be made to the equipment.

[51 FR 31213, Sept. 2, 1986, as amended at 53 FR 41434, Oct. 28, 1987]

§ 80.179 Unattended operation.

The following unattended transmitter operations are authorized:

(a) EPIRB operations when emergency conditions preclude attendance of the EPIRB transmitter by a person.

(b) Automatic use of a transmitter during narrow band-direct printing (NB-DP) operations in accordance with CCIR Recommendation 476 or 625.

(c) Automatic use of a transmitter during digital selective calling (DSC) operations in accordance with CCIR Recommendations 493 and 541.

(d) Automatic use of transmitter when operating as part of the Automated Maritime Telecommunications System (AMTS) or an automated multi-station system for which provisions are contained in this part.

(e) Automatic use of a VHF transmitter to send brief digital communications relating to the condition or safety of vessels while moored when all of the following conditions are met:

(1) The equipment must be using DSC in accordance with CCIR Recommendations 493 and 541 as modified by this section.

(2) Sensors must automatically activate the transmitter only under one or more of the following conditions:

(i) Fire, explosion;

(ii) Flooding;

(iii) Collision;

(iv) Grounding;

(v) Listing, in danger of capsizing;

(vi) Sinking;

(vii) Disabled and adrift; and

(viii) Undesignated condition related to ship safety.

(3) The "ROUTINE" DSC category must be used.

(4) Communications must be selectively addressed to an individual station.

(5) Transmitter output power must not exceed one watt.

(6) The call must employ a fixed format and must be in conformity with Recommendation 493 as follows:

Format specifier: Individual call—symbol 120 sent twice.

Address: 9 digit maritime mobile service identity of called station.

Category: Routine—symbol 100.

Self-identification: 9 digit ship station identity.

Message 1: Telecommand symbol 126 sent twice.

Message 2: Telecommand symbol 126 sent 6 times.

End of sequence: Symbol 127.

Error-check character: Check sum.

(7) Such transmissions are permitted only on channel 70 and the transmitter must be inhibited automatically whenever there is another call in progress on Channel 70.

(8) The call sequence for any one alarm must not be repeated until after an interval of at least five seconds. Further repetition is permitted only after intervals of at least fifteen minutes each. Repetitions following fifteen-minute waiting intervals must not exceed three.

[54 FR 10008, Mar. 9, 1989]

Subpart E—General Technical Standards

§ 80.201 Scope.

This subpart gives the general technical requirements for the use of frequencies and equipment in the maritime services. These requirements include standards for equipment authorization, frequency tolerance, modulation, emission, power and bandwidth.

§ 80.203 Authorization of transmitters for licensing.

(a) Each transmitter authorized in a station in the maritime services after September 30, 1986, except as indicated in paragraphs (f), (g) and (h) of this section, must be type accepted by the Commission for part 80 operations. The procedures for type acceptance are contained in part 2 of this chapter. Transmitters of a model type accepted or type approved before October 1, 1986 will be considered type accepted for use in ship or coast stations as appropriate.

(b) The external controls, of maritime station transmitters capable of operation in the 156–162 MHz band and manufactured in or imported into the United States after August 1, 1990, or sold or installed after August 1, 1991, must provide for selection of only maritime channels for which the maritime station is authorized. Such transmitters must not be capable of being programmed by station operators using external controls to transmit on channels other than those programmed by the manufacturer, service or maintenance personnel.

(1) Any manufacturer procedures and special devices for programming must only be made available to service companies employing licensed service and maintenance personnel that meet the requirements of § 80.169(a) and must not be made available with information normally provided to consumers.

(2) The channels preprogrammed by manufacturers, service and maintenance personnel for selection by the external controls of a maritime station transmitter must be limited to those channels listed in this part and the duplex channels listed in Appendix 18 of the international Radio Regulations. The duplex channels listed in Appendix 18 of the international Radio Regulations must be used only in the specified duplex mode. Simplex operations on Appendix 18 duplex channels that are not in accordance with this part are prohibited.

(3) Programming of authorized channels must be performed only by a person holding a first or second class radiotelegraph operator's certificate or a general radiotelephone operator's license using any of the following procedures:

(i) Internal adjustment of the transmitter;

(ii) Use of controls normally inaccessible to the station operator;

(iii) Use of external devices or equipment modules made available only to service and maintenance personnel through a service company; and

(iv) Copying of a channel selection program directly from another transmitter (cloning) using devices and procedures made available only to service and maintenance personnel through a service company.

(4) VHF maritime radio station transmitters capable of being pro-

grammed by station operators by means of external controls that are installed in a maritime station by August 1, 1991, are authorized for use indefinitely at the same maritime station.

(c) Except for radar equipment, applicants for type acceptance of radio equipment designed to satisfy Part II of Title III of the Communications Act or the Safety Convention must also submit with their application a working unit of the type for which type acceptance is desired. Manufacturers of radar equipment intended for installation on voluntarily equipped ships by persons without FCC operators license must include with their equipment authorization application a manual that provides step-by-step procedures for the installation, calibration, and operation of the radar stations.

(d) Double sideband (DSB) radiotelephone equipment operating in the 1605-27500 kHz band will be authorized only for use in ship stations. Such equipment must comply with Chapter IV of the Safety Convention, operate only on the frequency 2182 kHz, and be marked "Distress and Safety Use Only".

(e) Transmitters type accepted for single sideband suppressed carrier radiotelephone transmissions may be used for facsimile transmissions without filing for a type acceptance modification provided the transmitters retain type acceptance and comply with the applicable standards in this part.

(f) Manufacturers of ship earth station transmitters intended for use in the INMARSAT space segment must comply with the verification procedures given in part 2 of this chapter. Verification of such equipment must be in accordance with the technical requirements provided in the INMARSAT document titled "Type Approval Procedures for an INMARSAT Standard-A Ship Earth Station Model". The ship earth station input/output parameters, the data obtained when the equipment is integrated in system configuration and the pertinent method of test procedures that are used for type approval of the station model which are essential for the compatible operation of that station in the INMARSAT space segment must be disclosed by the manufacturer upon request of the FCC or the United States Signatory. Witnessing of the type approval tests and the disclosure of the ship earth station equipment design or any other information of a proprietary nature will be at the discretion of the ship earth station manufacturer. Transmitters of a model that was type accepted by MARISAT for use in its system will be considered verified for use in the INMARSAT system. However, the continued use of such equipment will not be permitted after September 1, 1991, unless verified under the Commission's procedures.

(g) In addition to the type acceptance requirements contained in part 2 of this chapter applicants for type acceptance of 406.025 MHz radiobeacons must also comply with the type acceptance procedures contained in § 80.1061 of this part.

(h) Type acceptance is not required for U.S. Government furnished transmitters to fulfill a U.S. Government contract. However, such transmitters must comply with all technical requirements in this part.

(i) Type acceptance is not required for transmitters authorized for developmental stations.

(j) Type acceptance of individual radio transmitters requested by station applicants or licensees must also follow the type acceptance procedure in paragraph (a) of this section. However, operation of such transmitters must be limited to the specific units individually identified on the station authorization. Such transmitters will not be included in the Commission's "Radio Equipment List".

(k) Ship station transmitters may be type accepted for emissions not shown in § 80.205 of this part. However, such emissions are not authorized for use in the United States or for communications with U.S. coast stations.

[51 FR 31213, Sept. 2, 1986, as amended at 53 FR 41434, Oct. 28, 1987; 53 FR 37308, Sept. 26, 1988; 54 FR 31839, Aug. 2, 1989]

§ 80.205 Bandwidths.

(a) An emission designator shows the necessary bandwidth for each class of emission of a station except that in ship earth stations it shows the occupied or necessary bandwidth, whichever is greater. The following table gives the class of emission and corresponding emission designator and authorized bandwidth:

Class of emission	Emission designator	Authorized bandwidth (kHz)
A1A	160HA1A	0.4
A1B [1]	160HA1B	0.4
A1D [12]	16K0A1D	20.0
A2A	2K66A2A	2.8
A2B [1]	2K66A2B	2.8
A2D [12]	16K0A2D	20.0
A3E	6K00A3E	8.0
A3N [2]	2K66A3N	2.8
A3N [3]	3K20A3N	25.0
F1B [4]	280HF1B	0.3
F1B [5]	300HF1B	0.5
F1B [6]	16KOF1B	20.0
F1C	2K80F1C	3.0
F1D [12]	16K0F1D	20.0
F2B [6]	16KOF2B	20.0
F2C [7]	16KOF2C	20.0
F2D [12]	16K0F2D	20.0
F3C	2K80F3C	3.0
F3C [7]	16KOF3C	20.0
F3E [8]	16KOF3E	20.0
F3N [9]	20MOF3N	20,000.0
G1D [12]	16K0G1D	20.0
G2D [12]	16K0G2D	20.0
G3D [10]	16KOG3D	20.0
G3E [8]	16KOG3E	20.0
G3N [3]	16KOG3N	20.0
H2A	1K40H2A	2.8
H2B [1]	1K40H2B	2.8
H3E [11]	2K80H3E	3.0
H3N	2K66H3N	2.8
J2A	160HJ2A	0.4
J2B [4]	280HJ2B	0.3
J2B	300HJ2B	0.5
J2B	2K80J2B	3.0
J2C	2K80J2C	3.0
J3C	2K80J3C	3.0
J3E [11]	2K80J3E	3.0
J3N	160HJ3N	0.4
NON	NON	0.4
PON	([12])	([12])
R3E [11]	2K80R3E	3.0

[1] On 500 kHz and 2182 kHz A1B, A2B, H2B and J2B emissions indicate transmission of the auto alarm signals.

[2] Applicable only to transmissions in the 405–525 kHz band for direction finding.

[3] Applicable only to EPIRB's.

[4] Radioprinter transmissions for communications with private coast stations.

[5] NB-DP radiotelegraph and data transmissions for communications with public coast stations.

[6] Applicable only to radioprinter in the 156–162 MHz and 216–220 MHz bands.

[7] Applicable only to facsimile in the 156–162 MHz and 216–220 MHz bands.

[8] Applicable only when maximum frequency deviation is 5 kHz. See also paragraph (b) of this section.

[9] Applicable only to marine hand-held radar.

[10] Applicable only to on-board frequencies for maneuvering or navigation.

[11] Transmitters type accepted prior to December 31, 1969, for emission H3E, J3E and R3E and an authorized bandwidth of 3.5 kHz may continue to be operated. These transmitters will not be authorized in new installations.

[12] Applicable to radiolocation and associated telecommand ship stations operating on 154.585 MHz, 159.480 MHz, 160.725 MHz, 160.785 MHz, 454.000 MHz, and 459.000 MHz, and to emergency position indicating radiobeacons operating in the 406.000–406.1000 MHz frequency band.

(b) For land stations the maximum authorized frequency deviation for F3E or G3E emission is as follows:

(1) 5 kHz in the 72.0–73.0 MHz, 75.4–76.0 MHz and 156–162 MHz bands;

(2) 15 kHz for stations which were authorized for operation before December 1, 1961, in the 73.0–74.6 MHz band.

[51 FR 31213, Sept. 2, 1986, as amended at 52 FR 7418, Mar. 11, 1987; 53 FR 37308, Sept. 26, 1988]

§ 80.207 Classes of emission.

(a) Authorization to use radiotelephone and radiotelegraph emissions by ship and coast stations includes the brief use of radiotelegraphy, including keying only the modulating audio frequency, tone signals, digital selective calling and other signalling devices to establish or maintain communications, provided:

(1) That these signalling techniques, other than digital selective calling, are not used on frequencies designated for general purpose DSC calling and distress and safety DSC calling as listed in § 80.359 (a) and (b).

(2) The authorized radiotelephone emission bandwidth is not exceeded; and

(3) Harmful interference is not caused to stations operating in accordance with the Radio Regulations.

(4) Use of selective calling equipment based upon this section, other than DSC equipment, may be continued for at least three years subsequent to an FCC Order that will authorize DSC as the only selective calling technique permitted for use in the maritime services. To quality for the continuation, the equipment must be used at the same station location where it was installed and operating on the date of the indicated FCC Order. This paragraph is not applicable to AMTS in the 216-220 MHz band or to NB-DP equipment that complies with CCIR Recommendation 476.

(b) In radiotelegraphy communications employing a modulated carrier the carrier must be keyed and modulated by an audio frequency.

(c) Authorization to use single sideband emission is limited to emitting a carrier;

(1) For full carrier transmitters at a power level between 3 and 6 dB below peak envelope power;

(2) For suppressed carrier transmitters at a power level at least 40 dB below peak envelope power; and

(3) For reduced or variable level carrier:

(i) In the 1600-4000 kHz band:

(A) For coast station transmitters 18±2 dB below peak envelope power;

(B) For ship station transmitters installed before January 2, 1982, 16±2 dB below peak envelope power; and

(C) For ship station transmitters installed after January 1, 1982, 18±2 dB below peak envelope power.

(ii) In the 4000-27500 kHz band:

(A) For coast station transmitters 18±2 dB below peak envelope power;

(B) For ship station transmitters installed before January 2, 1978, 16±2 dB below peak envelope power; and

(C) For ship station transmitters installed after January 1, 1978, 18±2 dB below peak envelope power.

(d) The authorized classes of emission are as follows:

Types of stations	Classes of emission
Ship Stations [1]	
Radiotelegraphy:	
100-160 kHz	A1A
405-525 kHz	A1A, J2A
1605-27500 kHz:	
Manual	A1A, J2A
DSC	F1B, J2B
NB-DP	F1B, J2B
Facsimile	F1C, F3C, J2C, J3C
156-220 MHz [2]	F1B, F2B, F2C, F3C
DSC	G2B
216-220 MHz [3]	F1B, F2B, F2C, F3C
1626.5-1646.5 MHz	(4)
Radiotelephony:	
1605-27500 kHz [5]	H3E, J3E, R3E
27.5-470 MHz [6]	G3D, G3E
1626.5-1646.5 MHz	(4)
Radiodetermination:	
285-325 kHz [7]	A1A, A2A
405-525 kHz (Direction Finding) [8].	A3N, H3N, J3N, NON
154-459 MHz:[12]	A1D, A2D, F1D, F2D, G1D, G2D
2.4-9.5 GHz	PON
14.00-14.05 GHz	F3N
Land Stations [1]	
Radiotelegraphy:	
100-160 kHz	A1A
405-525 kHz	A1A, J2A
1605-2850 kHz:	
Manual	A1A, J2A
Facsimile	F1C, F3C, J2C, J3C
Alaska—Fixed	A1A, J2A
4000-27500 kHz:	
Manual	A1A, J2A
DSC	F1B, J2B
NB-DP	F1B, J2B
Facsimile	F1C, F3C, J2C, J3C
Alaska—Fixed	A1A, A2A, F1B, F2B
72-76 MHz	A1A, A2A, F1B, F2B
156-162 MHz [2]	F1B, F2B, F2C, F3C
DSC	G2B
216-220 MHz [3]	F1B, F2B, F2C, F3C
Radiotelephony:	
1605-27500 kHz	H3E, J3E, R3E
72-76 MHz	A3E, F3E, G3F
156-470 MHz	G3E
Radiodetermination:	
2.4-9.6 GHz	PON
Distress, Urgency and Safety: [8] [9]	
500 kHz [10]	A2A and A2B or H2A and H2B
2182 kHz [10] [11]	A2B, A3B, H2B, H3E, J2B, and J3E
8364 kHz	A2A, H2A
121.500 MHz	A3E, A3N, NON
123.100 MHz	A3E
156.750 and 156.800 MHz	G3E, G3N
243.000 MHz	A3E, A3N, NON
406.025 MHz	G1D

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[1] Excludes distress, EPIRB's, and survival craft.

[2] Frequencies used in the automated multi-station system. See § 80.385(b).

[3] Frequencies used in the Automated Maritime Telecommunications System (AMTS). See § 80.385(b).

[4] Types of emission are determined by the INMARSAT Organization.

[5] Transmitters type accepted prior to December 31, 1969 for emission H3E, J3E, and R3E and an authorized bandwidth of 3.5 kHz may continue to be operated. These transmitters will not be authorized in new installations.

[6] G3D emission must be used only by one-board stations for maneuvering or navigation.

[7] Frequencies used for cable repair operations. See § 80.375(b).

[8] For direction finding requirements see § 80.375.

[9] Includes distress emissions used by ship, coast, EPIRB's and survival craft stations.

[10] On 500 kHz and 2182 kHz A1B, A2B, H2B and J2B emissions indicate transmission of the auto alarm signals.

[11] Ships on domestic voyages must use J3E emission only.

[12] For frequencies 154.585 MHz, 159.480 MHz, 160.725 MHz, 160.785 MHz, 454.000 MHz and 459.000 MHz, authorized for offshore radiolocation and related telecommand operations.

[51 FR 31213, Sept. 2, 1986; 51 FR 34984, Oct. 1, 1986; as amended at 52 FR 7418, Mar. 11, 1987; 52 FR 35244, Sept. 18, 1987; 53 FR 8905, Mar. 18, 1988; 53 FR 37308, Sept. 26, 1988; 54 FR 40058, Sept. 29, 1989; 54 FR 49993, Dec. 4, 1989]

§ 80.209 Transmitter frequency tolerances.

(a) The frequency tolerances applicable to transmitters in the maritime services are shown in the following table. Tolerances are given as parts in 10^6 unless shown in Hz.

ency bands and ories of stations	Tolerances applicable until January 1, 1990, for transmitters installed before January 2, 1987	Tolerances applicable [1] to new transmitters installed after January 1, 1987, and to all transmitters after January 1, 1990
d 100–525 kHz: ast stations:		
single ideband missions.	20 Hz	20 Hz
narrow-band irect-printing nd data missions.	10 Hz [5]	10 Hz [5]
digital elective calling missions.	10 Hz [3]	10 Hz [3]
all other missions	200	100
p stations.		
transmitters ith single ideband mission type ccepted or type pproved before ov. 30, 1977.	50 Hz	
transmitters th other missions type ccepted or type proved before ov. 30, 1977.	1000	
narrow-band ect-printing d data issions.	10 Hz [5]	10 Hz [5]
ransmitters h digital ective calling issions.	20 Hz [3]	10 Hz [3]
ll transmitters e accepted or e approved er Nov. 29, 77.	20 Hz	20 Hz
stations for gency only:		
ansmitters e approved ore vember 30, 7.	3000	
ansmitters e approved r November 1977.	20 Hz	20 Hz
ival craft ns:		
ansmitters approved re ember 30, 7.	5000	
nsmitters approved November 1977.	20 Hz	20 Hz
determina- ations:		
emissions	100	100

Frequency bands and categories of stations	Tolerances applicable until January 1, 1990, for transmitters installed before January 2, 1987	Tolerances applicable [1] to new transmitters installed after January 1, 1987, and to all transmitters after January 1, 1990
(2) Band 1600–4000 kHz:		
(i) Coast stations and Alaska fixed stations:		
For single sideband and facsimile emissions.	20 Hz	20 Hz
For narrow-band direct-printing and data emissions.	10 Hz [5]	10 Hz [5]
For digital selective calling emissions.	15 Hz [3]	10 Hz [3]
For all other emissions.	50	50
(ii) Ship stations:		
For transmitters with single sideband and facsimile emission type accepted or type approved before Nov. 30, 1977.	50 Hz	
For transmitters with other emissions type accepted or type approved before Nov. 30, 1977.	200	
For narrow-band direct-printing and data emissions.	10 Hz [5]	10 Hz [5]
For transmitters with digital selective calling emissions.	20 Hz [3]	10 Hz [3]
For all transmitters type accepted or type approved after Nov. 29, 1977.	20 Hz	20 Hz
(iii) Survival craft stations:		
For transmitters type approved before November 30, 1977.	200	
For transmitters type approved after November 29, 1977.	20 Hz	20 Hz
(iv) Radiodetermination stations:		
With power 200W or less.	100	20
With power above 200W.	50	10

Frequency bands and categories of stations	Tolerances applicable until January 1, 1990, for transmitters installed before January 2, 1987	Tolerances applicable [1] to new transmitters installed after January 1, 1987, and to all transmitters after January 1, 1990
(3) Band 4000–27500 kHz:		
(i) Coast stations and Alaska fixed stations:		
For single sideband and facsimile emissions.	20 Hz	20 Hz
For narrow-band direct-printing and data emissions.	10 Hz [5]	10 Hz [5]
For digital selective calling emissions.	15 Hz [2]	10 Hz [2]
For Morse telegraphy emissions.	15	10
For all other emissions.	15	15
(ii) Ship stations:		
For transmitters with Morse telegraphy emission type accepted or type approved before Nov. 30, 1977.	200 Hz	
For transmitters with other emissions type accepted or type approved before Nov. 30, 1977.	50 Hz	
For narrow-band direct-printing and data emissions.	10 Hz [5]	10 Hz [5]
For transmitters with digital selective calling emissions.	20 Hz [3]	10 Hz [3]
For all other transmitters type accepted or type approved after Nov. 29, 1977.	20 Hz	20 Hz
(iii) Survivel craft stations:		
For transmitters type approved before November 30, 1977.	200	
For transmitters type approved before November 29, 1977.	50 Hz	50 Hz
(4) Band 72–76 MHz:		
Fixed stations:		
Operating in the 72.0–73.0 and 75.4–76.0 MHz bands.	5	5
Operating in the 73.0–74.6 MHz band.	50	50
(5) Band 156–162 MHz:		
(i) Coast stations:		
For stations licensed to operate with a carrier power:.		
Below 3 watts	10	10
3 to 100 watts	5	5
Above 100 watts.	2.5	2.5
(ii) Ship stations	[4] 10	[4] 10
(iii) Survival craft stations operating on 121.500 MHz.	50	50
(iv) EPIRB's:		
Operating on 121.500 and 243.000 MHz.	50	50
Operating on 156.750 and 156.800 MHz.	20	10
(6) Band 216–220 MHz:		
(i) Coast Stations: For all emissions.	5	5
(ii) Ship stations: For all emissions.	5	5
(7) Band 400–466 MHz:		
(i) EPIRBs operating on 406.025 MHz.	5	5
(ii) On-board stations	5	5
(8) Band 1626.5–1646.5 MHz:		
Ship earth stations	5	5

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[1] Transmitters authorized prior to January 2, 1990, wi frequency tolerances equal to or better than those require after this date will continue to be authorized in the maritim services provided they retain type acceptance and compl with the applicable standards in this part.

[2] Until January 1, 1990, the frequency tolerance for DS coasts station transmitters in the MF and HF bands is 15 H Thereafter, the frequency tolerance for DSC coast statio transmitters in the MF and HF bands is 10 Hz.

[3] Until February 2, 1999, the frequency tolerance for DS ship station transmitters in the MF and HF bands that wer installed before January 2, 1992, is 20 Hz. The frequenc tolerance for DSC ship station transmitters in the MF and H bands installed after January 1, 1992, is 10 Hz. On Februar 2, 1999, the frequency tolerance for all DSC ship statio transmitters in the MF and HF bands (regardless of installa tion date) is 10 Hz.

[4] For transmitters in the radiolocation and associated tele command service operating on 154.585 MHz, 159.480 MHz 160.725 MHz, and 160.785 MHz the frequency tolerance i 15 parts in 10^{6}.

[5] The frequency tolerance for narrow-band direct-printin and data transmitters installed before January 2, 1992, is 1 Hz for coast stations and 20 Hz for ship stations. Th frequency tolerance for new narrow-band direct-printing an data transmitters installed after January 1, 1992, is 10 H

(b) When pulse modulation is used in land and ship radar stations operating in the bands above 2.4 GHz the frequency at which maximum emission occurs must be within the authorized bandwidth and must not be closer than 1.5/T MHz to the upper and lower limits of the authorized bandwidth where "T" is the pulse duration in microseconds. In the band 14.00-14.05 GHz the center frequency must not vary more than 10 MHz from 14.025 GHz.

(c) For stations in the maritime radiodetermination service, other than ship radar stations, the authorized frequency tolerance will be specified on the license when it is not specified in this Part.

[51 FR 31213, Sept. 2, 1986, as amended at 52 FR 7418, Mar. 11, 1987; 53 FR 37308, Sept. 26, 1988; 54 FR 49994, Dec. 4, 1989]

§ 80.211 Emission limitations.

The emissions must be attenuated according to the following schedule.

(a) The mean power when using emissions H3E, J3E and R3E:

(1) On any frequency removed from the assigned frequency by more than 50 percent up to and including 150 percent of the authorized bandwidth:

at least 25 dB for transmitters installed before February 1, 1992,

at least 28 dB for transmitters installed on or after February 1, 1992;

(2) On any frequency removed from the assigned frequency by more than 150 percent up to and including 250 percent of the authorized bandwidth: At least 35 dB; and

(3) On any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth: At least 43 plus $10\log_{10}$ (mean power in watts) dB.

(b) For transmitters operating in the band 1626.5-1646.5 MHz. In any 4 kHz band the mean power of emissions shall be attenuated below the mean output power of the transmitter as follows:

(1) Where the center frequency is removed from the assigned frequency by more than 50 percent up to and including 100 percent of the authorized bandwidth: At least 25 dB;

(2) Where the center frequency is removed from the assigned frequency by more than 100 percent up to 250 percent of the authorized bandwidth: At least 35 dB; and

(3) On any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth: At least 43 plus $10\log_{10}$ (mean power in watts) dB.

(c) In any 4 kHz band the peak power of spurious emissions and noise at the input to the transmit antenna must be attenuated below the peak output power of the station as follows:

(1) 125 dB at 1525.0 MHz, increasing linearly to 90 dB at 1612.5 MHz;

(2) 90 dB at 1612.5 MHz increasing linearly to 60 dB at 1624.0 MHz;

(3) 90 dB from 1624.0 MHz to 1650.0 MHz, except at frequencies near the transmitted carrier where the requirements of paragraphs (b)(1) through (3) of this section, apply;

(4) 60 dB at 1650.0 MHz decreasing linearly to 90 dB at 1662.5 MHz;

(5) 90 dB at 1662.5 MHz decreasing linearly to 125 dB at 1752.5 MHz; and

(6) 125 dB outside above range, except for harmonics which must comply with (b)(3) of this section.

(d) Radiotelegraph survival craft transmitters must comply with § 80.223.

(e) Developmental stations must conform to the standards for regular authorized stations.

(f) The mean power when using emissions other than those in paragraphs (a), (b), (c) and (d) of this section:

(1) On any frequency removed from the assigned frequency by more than 50 percent up to and including 100 percent of the authorized bandwidth: At least 25 dB;

(2) On any frequency removed from the assigned frequency by more than 100 percent up to and including 250 percent of the authorized bandwidth: At least 35 dB; and

(3) On any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth: At least 43 plus $10\log_{10}$ (mean power in watts) dB.

[51 FR 31213, Sept. 2, 1986, as amended at 54 FR 40058, Sept. 29, 1989; 54 FR 49994, Dec. 4, 1989]

§ 80.213 Modulation requirements.

(a) Transmitters must meet the following modulation requirements:

(1) When double sideband emission is used the peak modulation must be maintained between 75 and 100 percent;

(2) When phase or frequency modulation is used in the 156-162 MHz and 216-220 MHz bands the peak modulation must be maintained between 75 and 100 percent. A frequency deviation of ±5 kHz is defined as 100 percent peak modulation; and

(3) In single sideband operation the upper sideband must be transmitted. Single sideband transmitters must automatically limit the peak envelope power to their authorized operating power and meet the requirements in § 80.207(c).

(b) Radiotelephone transmitters using A3E, F3E and G3E emission must have a modulation limiter to prevent any modulation over 100 percent. This requirement does not apply to survival craft transmitters, to transmitters that do not require a license or to transmitters whose output power does not exceed 3 watts.

(c) Coast station transmitters operated in the 72.0-73.0 MHz and 75.4-76.0 MHz bands must be equipped with an audio low-pass filter. The filter must be installed between the modulation limiter and the modulated radio frequency stage. At frequencies between 3 kHz and 15 kHz it must have an attenuation greater than at 1 kHz by at least $40\log_{10}(f/3)$ dB where "f" is the frequency in kilohertz. At frequencies above 15 kHz the attenuation must be at least 28 dB greater than at 1 kHz.

(d) Ship station transmitters using G3D or G3E emission in the 156-162 MHz and 216-220 MHz bands must be capable of proper technical operation with a frequency deviation of ±5 kHz.

(e) Coast station transmitters operated in the 156-162 MHz band must be equipped with an audio low-pass filter. The filter must be installed between the modulation limiter and the modulated radio frequency stage. At frequencies between 3 kHz and 20 kHz it must have an attenuation greater than at 1 kHz by at least $60\log_{10}(f/3)$ dB where "f" is the audio frequency in kilohertz. At frequencies above 20 kHz the attenuation must be at least 50 dB greater than at 1 kHz.

(f) Radiodetermination ship stations operating on 154.585 MHz, 159.480 MHz, 160.725 MHz, 160.785 MHz, 454.000 MHz and 459.000 MHz must employ a duty cycle with a maximum transmission period of 60 seconds followed by a minimum quiescent period four times the duration of the transmission period.

(g) Radar stations operating in the bands above 2.4 GHz may use any type of modulation consistent with the bandwidth requirements in § 80.209(b).

(h) Radar transponder coast stations using the 2920-3100 MHz or 9320-9500 MHz band must operate in a variable frequency mode and respond on their operating frequencies with a maximum error equivalent to 100 meters. Additionally, their response must be encoded with a Morse character starting with a dash. The duration of a Morse dot is defined as equal to the width of a space and ⅓ of the width of a Morse dash. The duration of the response code must not exceed 50 microseconds. The sensitivity of the stations must be adjustable so that received signals below −10 dBm at the antenna will not activate the transponder. Antenna polarization must be horizontal when operating in the 9320-9500 MHz band and either horizontal or both horizontal and vertical when operating in the 2920-3100 MHz band. Racons using frequency agile transmitting techniques must include circuitry designed to reduce interference caused by triggering from radar antenna sidelobes.

(i) Variable frequency ship station transponders operating in the 2920-3100 MHz or 9320-9500 MHz band that are not used for search and rescue purposes must meet the following requirements:

(1) Non-selectable transponders must have the following characteristics:

(i) They must respond on all their frequencies with a maximum range error equivalent to 100 meters;

(ii) They must use a Morse encoding of "PS" (dot-dash-dash-dot, dot-dot-dot), meaning "You should not come any closer". The width of a Morse dot is defined as equal to the width of a space and ⅓ of the width of a Morse dash;

(iii) When they employ swept frequency techniques they must not transmit on any frequency for more than 10 seconds in any 120 second period;

(iv) Any range offset of their response must occur during their pause on the fixed frequency;

(v) The duration of the response code must not exceed 50 microseconds;

(vi) The sensitivity of the stations must be adjustable so that received signals below −10 dBm at the antenna input will not activate the transponder;

(vii) Antenna polarization must be horizontal when operating in the 9320-9500 MHz band and either horizontal or both horizontal and vertical when operating in the 2920-3100 MHz band.

(viii) Transponders using frequency agile techniques must include circuitry designed to reduce interference caused by triggering from radar antenna sidelobes.

(2) Selectable transponders must be authorized under Part 5 of the Commission's rules until standards for their use are developed.

(j) The transmitted signals of search and rescue transponders must cause to appear on a radar display a series of at least 20 equally spaced dots.

(k) The modulation requirements for EPIRB's are contained in Subpart V.

[51 FR 31213, Sept 2, 1986, as amended at 52 FR 7418, Mar. 11, 1987; 52 FR 28825, Aug. 4, 1987; 54 FR 40058, Sept. 29, 1989]

§ 80.215 Transmitter power.

(a) Transmitter power shown on the radio station authorization is the maximum power the licensee is authorized o use. Power is expressed in the fol-owing terms:

(1) For single sideband emission: Peak evelope power;

(2) For G3E emission: Carrier power;

(3) For PON and F3N emission: Mean power;

(4) For all emissions in the 1626.5-646.5 MHz band: equivalent isotropic adiated power.

(5) For all other emissions: the carri-r power multiplied by 1.67.

(b) *Coast station frequencies below 27500 kHz.* The maximum power must not exceed the values listed below.

(1) Public coast stations, except Alaska:

(i) Radiotelegraphy:

100-160 kHz—80kW
405-525 kHz—40kW
2035-2065 kHz—6.6kW
4000-8000 kHz—10kW
8000-9000 kHz—20kW
12000-27500 kHz—30kW

(ii) Radiotelephony:

2000-4000 kHz—day—800W
2000-4000 kHz—night—400W
4000-27500 kHz—10kW

(2) Private coast stations, except in Alaska: 1kW

(3) Coast stations in Alaska, public and private:

405-525 kHz—265W
1605-12000 kHz—150W

(c) *Coast station frequencies above 27500 kHz.* The maximum power must not exceed the values listed below.

(1) Coast stations:

156-162 MHz—50W [1, 2]

216-220 MHz [2]

(2) Marine utility stations:

156-162 MHz—10W

(d) *Ship station frequencies below 27500 kHz.* The maximum power must not exceed the values listed below:

(1) Radiotelegraphy: All ships—2kW [3]

(2) Radiotelephony:

(i) All ships—Great Lakes and Inland Waters—150W

(ii) All ships—Open waters; 2000-4000 kHz—150W

2182 kHz—emergency, urgency, or safety ship to shore—400W [4]

(iii) All ships—Open waters; 4000-27500 kHz—1.5kW [5].

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[1] Maximum authorized power at the input terminals of the station antenna.

[2] See paragraph (h) of this section.

[3] For passenger ships 5000 gross tons and over—8kW. For cable-repair ships—15W; see § 80.375(b).

[4] For passenger ships 5000 gross tons and over—1kW.

[5] For passenger ships 5,000 gross tons and over 3kW.

(3) Digital selective calling:

All ships 415-526.5 kHz--400 W
All ships 1605-4000 kHz—400 W
All ships 4000-27500 kHz—1.5 kW

(e) *Ship stations frequencies above 27500 kHz.* The maximum power must not exceed the values listed below.

(1) Ship stations 156-162 MHz—25W [6]

Marine utility stations and hand-held portable transmitters 156-162 MHz—10W

(2) Ship stations 216-220 MHz—25W [7]

(3) On board stations 456-468 MHz—4W [8]

(4) Ship earth stations 1626.5-1646.5 MHz [9]

(5) Ship radar stations with F3N emission—200 mW

(6) EPIRB—121.500 and 243.00 MHz [10]

(7) EPIRB—156.750 and 156.800 MHz [10]

(f) *Fixed stations.* The maximum power must not exceed the values listed below.

(1) Maritime support (receiver test):

R3E and J3C emission—150W
F3E emission—50W

(2) Operational fixed: 72-76 MHz and above 162 MHz [11]

(3) Alaska—Private fixed:

10-200 kHz—650W
405-525 kHz—265W
1605-12000 kHz—150W

(4) Alaska—Public fixed:

405-525 kHz—1kW
1605-12000 kHz—1kW

(g) The carrier power of ship station radiotelephone transmitters, except portable transmitters, operating in the 156-162 MHz band must be at least 8 but not more than 25 watts. Transmitters that use 12 volt lead acid storage batteries as a primary power source must be measured with a primary voltage between 12.2 and 13.7 volts DC. Additionally, unless otherwise indicated, equipment in radiotelephone ship stations operating in the 156-162 MHz band must meet the following requirements:

(1) All transmitters must be capable of reducing the carrier power to one watt or less;

(2) All remote control units that are used with transmitters manufactured after August 31, 1979, or installed after February 29, 1980, must be capable of causing the carrier power to be reduced to one watt or less;

(3) Except as indicated in (4) of this paragraph, all transmitters manufactured after January 21, 1987, or in use after January 21, 1997, must automatically reduce the carrier power to one watt or less when the transmitter is tuned to 156.375 MHz or 156.650 MHz, and must be provided with a manual override switch which when held by an operator will permit full carrier power operation on 156.375 MHz and 156.650 MHz;

(4) Hand-held portable transmitters are not required to comply with the automatic reduction of carrier power in (g)(3) of this section; and

(5) Transmitters dedicated for use on public correspondence duplex channels as additional equipment to a VHF ship station in the Great Lakes which meet all pertinent rules in this part are not required to reduce their carrier power to one watt.

(h) Coast stations in an AMTS may radiate as follows, subject to the condition that no harmful interference will be caused to television reception except that TV services authorized subsequent to the filing of the AMTS station application will not be protected.

(1) When located more than 169 kilometers (105 miles) from the antenna of a Channel 13 TV station and more

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[6] Reducible to 1 watt or less, except for transmitters limited to public correspondence channels and used in an automated system.

[7] Reducible to 2.5 watts or less; see paragraph (i) of this section.

[8] Type acceptance based on a carrier power of 4 watts with transmitter connected to a dummy load of matching impedance. The effective radiated power must not exceed 2 watts.

[9] See paragraph (k) of this section.

[10] See subpart V of this part.

[11] See paragraph (l) of this section.

[12] The frequencies 156.375 MHz and 156.650 MHz are primarily intership frequencies. When authorized for coast stations on a secondary basis, the normal output power must not exceed 1 watt and the maximum output power must not exceed 10 watts.

than 129 kilometers (80 miles) from the antenna of a channel 10 station, the ERP of coast stations having an antenna height of 61 meters (200 feet) or less above ground must not exceed 1000 watts.

(2) Coast stations located less than 169 kilometers (105 miles) from a Channel 13 TV station, or less than 129 kilometers (80 miles) from a channel 10 station or when using a transmitting antenna height above ground greater than 61 meters (200 feet), must submit a plan to limit interference to TV reception. The plan must include:

(i) A description of the interference contour with indentification of the method used to determine this contour; and

(ii) A statement concerning the number of residences within the interference contour. The interference contour includes only areas inside the TV grade B contour with the latter determined assuming maximum permissible TV antenna height and power for broadcast stations and the actual facility parameters for translators and low power TV stations. See part 73, subpart E of this chapter for further information on TV grade B contour determination.

(3) When located as described in paragraph (h)(2) of this section, the coast station will be authorized if the applicant's plan has limited the interference contour to fewer than 100 residences or if the applicant:

(i) Shows that the proposed site is the only suitable location;

(ii) Develops a plan to control any interference caused to TV reception within the Grade B contour from its operations; and

(iii) Agrees to make such adjustments in the TV receivers affected as may be necessary to eliminate interference caused by its operations.

(4) The applicant must eliminate any interference caused by its operation to TV reception within the Grade B contour that might develop within 90 days of the time it is notified in writing by the Commission. If this interference is not removed within the 90-day period, operation of the coast station must be discontinued. The licensee is expected to help resolve all complaints of interference, whether inside or outside the Grade B contour.

(5) Frequencies below 217.000 MHz are not authorized to coast stations located within 169 kilometers (105 miles) of a Channel 13 TV station. See § 80.385(a).

(6) The transmitter output power must be 50 watts or less.

(i) A ship station must have a transmitter output power not exceeding 25 watts and an ERP not exceeding 18 watts. The transmitter must include the capability to reduce the carrier power to 2.5 watts with a front panel control. The maximum transmitter output power is permitted to be increased to 50 watts under the following conditions:

(1) Increases exceeding 25 watts are made only by radio command from the controlling coast stations; and

(2) The application for an equipment authorization demonstrates that the transmitter output power is 25 watts or less when external radio commands are not present.

(j) A ship installation with a transmitter output power exceeding 25 watts under the conditions of paragraph (i) of this section is exempted from the limitation of 18 watts ERP when operating in specific geographical areas identified in a plan for the use of higher power.

(k) Within the 1626.5-1646.5 MHz band the maximum e.i.r.p by a ship earth station in any direction in the horizontal plane or in the direction of the space station must not exceed +40 dB relative to one watt in any 4 kHz band in the main beam, except upon a satisfactory showing of need for greater power, in which case a maximum of +55 dB relative to one watt may be authorized.

(l) For operational fixed stations using frequencies in the 72-76 MHz band and for other classes of stations operating above 162.025 MHz, the transmitter power must be specified in the station authorization. Frequencies in the 72-76 MHz band are listed in § 80.381. The operational requirements for 72-76 MHz are contained in Subpart L of this part.

(m) For radiodetermination transmitters using A1D, A2D, F1D, F2D, G1D and G2D emissions on 154.585

MHz, 159.480 MHz, 160.725 MHz, 160.785 MHz, 454.000 MHz and 459.000 MHz the mean output power of the unmodulated carrier must not exceed 25 watts.

(n) For radiodetermination stations operating above 2400 MHz the output power must be as follows:

(1) For radar stations that use F3N emission the mean output power must not exceed 200 milliwatts;

(2) For search and rescue stations the output power must be at least 400 milliwatts peak e.i.r.p.

(3) For all other transponder stations the output power must not exceed 20 watts peak e.i.r.p. Licensees of non-selectable transponder coast stations operating in the 2920-3100 MHz and 9320-9500 MHz bands must notify in writing the USCG District Commander of any incremental increase of their station's output power above 5 watts peak e.i.r.p.

[51 FR 31213, Sept. 2, 1986, as amended at 52 FR 7419, Mar. 11, 1987; 52 FR 35244, Sept. 18, 1987; 54 FR 40058, Sept. 29, 1989; 54 FR 49994, Dec. 4, 1989]

§ 80.217 Suppression of interference aboard ships.

(a) A voluntarily equipped ship station receiver must not cause harmful interference to any receiver required by statute or treaty.

(b) The electromagnetic field from receivers required by statute or treaty must not exceed the following value at a distance over sea water of one nautical mile from the receiver:

Frequency of interfering emissions	Field intensity in microvolts per meter
Below 30 MHz	0.1
30 to 100 MHz	.3
100 to 300 MHz	1.0
Over 300 MHz	3.0

or

Deliver not more than the following amounts of power, to an artificial antenna having electrical characteristics equivalent to those of the average receiving antenna(s) use on shipboard:

Frequency of interfering emissions	Power to artificial antenna in microwatts
Below 30 MHz	400
30 to 100 MHz	4,000
100 to 300 MHz	40,000
Over 300 MHz	400,000

§ 80.219 Special requirements for narrow-band direct-printing (NB-DP) equipment.

NB-DP and data transmission equipment installed in ship and coast stations before October 1, 1990, that operate on frequencies in the 4000-27500 kHz bands must conform to the technical requirements of CCIR Recommendations 476 or 625. Equipment installed on or after October 1, 1990, must conform to the technical requirements of CCIR Recommendation 625. Equipment installed before October 1, 1990, and built in accordance with CCIR Recommendation 476, however, may continue to be used.

[54 FR 49994, Dec. 4, 1989]

§ 80.221 Special requirements for automatically generating the radiotelephone alarm signal.

(a) Each device for automatically generating the radiotelephone alarm signal must be capable of being disabled to permit the immediate transmission of a distress call and message.

(b) The device must comply with the following requirements:

(1) The frequency tolerance of each tone must be ±1.5 percent;

(2) The duration tolerance of each tone must be ±50 milliseconds;

(3) The interval between successive tones must not exceed 50 milliseconds; and

(4) The amplitude ratio of the tones must be flat within 1.6 dB.

(c) Devices installed on or after January 1, 1983, must comply with the following requirements:

(1) The frequency tolerance of each tone must be ±1.5 percent;

(2) The duration tolerance of each tone must be ±10 milliseconds;

(3) The interval between successive tones must not exceed 4 milliseconds;

i) The amplitude ratio of the tones
st be flat within 1.6 dB;
5) The output of the device must be
ficient to modulate the associated
nsmitter for H2B emission to at
st 70 percent, and for J2B emission
within 3 dB of the rated peak enve-
e power;
3) Light from the device must not
erfere with the safe navigation of
ship;
) After activation the device must
omatically generate the radiotele-
one alarm signal for not less than
seconds and not more than 60 sec-
s unless manually interrupted;
) After generating the radiotele-
ne alarm signal or after manual
erruption the device must be imme-
ely ready to repeat the signal;
) The transmitter must be auto-
ically switched from the stand-by
dition to the transmit condition at
start and return to the stand-by
dition at the conclusion of the ra-
elephone alarm signal.
) Any device used by a station to
omatically generate the radiotele-
ne alarm signal must be type ac-
ed by the Commission.

FR 31213, Sept. 2, 1986, as amended at
R 40059, Sept. 29, 1989]

223 Special requirements for survival craft stations.

) Survival craft stations capable of
smitting on:
) 500 kHz must be able to operate
class A2A and A2B or H2A and
emissions;
2182 kHz must be able to operate
A2B and A3E or H2B and H3E
J2B and J3E emissions;
8364 kHz must be able to operate
class A2A or H2A emission; and
121.500 MHz must be able to op-
e with A3E or A3N emission.
Survival craft stations must be
to receive the frequency and
s of emission which the transmit-
is capable of using. Where the
smitter frequency is 8364 kHz the
ver must be able to receive A1A,
and H2A emissions throughout
3320-8745 kHz band.
Survival craft transmitters oper-
on 500 kHz or on 8364 kHz must
le to be manually keyed. If provi-
are made for automatically
transmitting the radiotelegraph alarm signal or the radiotelegraph distress signal, such provisions must meet the requirements in subpart F of this part.

(d) When an EPIRB is part of a survival craft station the EPIRB portion must be capable of transmitting on the frequencies and emissions contained in subpart V of this chapter.

[51 FR 31213, Sept. 2, 1986, as amended at 53 FR 8905, Mar. 18, 1988; 53 FR 37308, Sept. 26, 1988]

§ 80.225 Requirements for digital selective calling (DSC) equipment.

This section specifies the requirements for optional DSC equipment installed in ship and coast stations. Reference to any CCIR Recommendation in this section is to the most recent CCIR approved Recommendation that does not prevent the use of existing equipment.

(a) DSC equipment installed in coast and ship stations must be designed in accordance with CCIR Recommendation 493. Classes A, B, and Class C DSC equipment must not be used with the sensors referred to in § 80.179(e)(2).

(b) Manufacturers of Class C DSC equipment to be used on United States vessels must affix a clearly discernible permanent plate or label visible from the operating controls containing the following:

Warning. This equipment is designed to generate a digital maritime distress and safety signal to facilitate search and rescue. To be effective as a safety device, this equipment must be used only within communication range of a shore-based VHF marine channel 70 distress and safety watch system. The range of the signal may vary but under normal conditions should be approximately 20 nautical miles.

(c) Selective calling equipment, other than that designed in accordance with CCIR Recommendation 493, is authorized as follows:

(1) Equipment used in conjunction with the Automated Maritime Telecommunications System (AMTS) in the band 216-220 MHz,

(2) Equipment used to perform a selective calling function during narrow-band direct-printing (NB-DP) oper-

ations in accordance with CCIR Recommendation 476 or 625, and

(3) Equipment functioning under the provisions of § 80.207(a) until at least three years after mandatory DSC requirements become effective.

[54 FR 10009, Mar. 9, 1989]

§ 80.227 Special requirements for protection from RF radiation.

As part of the information provided with transmitters for ship earth stations, manufacturers of each such unit must include installation and operating instructions to help prevent human exposure to radiofrequency (RF) radiation in excess of the RF exposure guidelines specified in § 1.1307(b) of the Commission's Rules.

[53 FR 28225, July 27, 1988]

Subpart F—Equipment Authorization for Compulsory Ships

§ 80.251 Scope.

(a) This subpart gives the general technical requirements for type acceptance of equipment used on compulsory ships. Such equipment includes radiotelegraph transmitters, radiotelegraph auto alarms, automatic-alarm-signal keying devices, survival craft radio equipment, watch receivers, and radar.

(b) The equipment described in this subpart must be type accepted.

(c) The term *transmitter* means the transmitter unit and all auxiliary equipment necessary to make this unit operate as a main or emergency transmitter in a ship station at sea. Each separate motor-generator, rectifier, or other unit required to convert the ship primary power to the phase, frequency, or voltage necessary to energize the transmitter unit is considered a component of the transmitter.

(d) *Average ship station antenna* means an actual antenna installed on board ship having a capacitance of 750 picofarads and an effective resistance of 4 ohms at a frequency of 500 kHz, or an artificial antenna having the same electrical characteristics.

§ 80.253 Technical requirements for main transmitter.

(a) The following table gives the operating carrier frequency, emission, modulation and average ship station antenna power requirements for the main transmitter.

Operating frequency (kHz)	Frequency tolerance		Class of emission	Percentage modulation for amplitude modulation	Modulation frequency for amplitude modulation	Power into average ship station antenna
	Parts [1] in 10^6	Hz [2]				
500 kHz	1,000	20	A2A and A2B or H2A and H2B.	Not less than 70; not more than 100.	At least 1 frequency between 300 and 1250 Hertz, except for transmittal installed after July 1, 1951, at least 1 frequency between 450 and 1250 Hertz.	Not less than 200 watts.
Do	1,000	20	A1A or J2A			Not less than 160 watts.
410 and 2 working frequencies in the band 415 to 525.	1,000	20	A2A and A3N or H2A and H3N.	Not less than 70; not more than 100.	At least 1 frequency between 300 and 1250 Hertz, except for transmitters installed after July 1, 1951, at least 1 frequency between 450 and 1250 Hertz.	Not less than 200 watts.
Do	1,000	20	A1A and N0N or J2A and J3N.			Not less than 160 watts.

[1] For equipment type accepted or type approved before November 30, 1977.
[2] For equipment type accepted or type approval after November 29, 1977.

(b) A main transmitter must operate at its required antenna power when adjusted to any required operating frequency and energized by the main power supply of the ship station or by an equivalent power supply.

(c) A main transmitter must be equipped to measure (1) antenna current, (2) transmitter power supply voltages, and (3) anode or collector current(s).

(d) The antenna power must be determined at the operating carrier frequency by the product of the antenna resistance and the square of the average antenna current, both measured at the same point in the antenna circuit at approximately ground potential.

(e) A main transmitter producing more than 250 watts output power must have the output power reduced to not more than 150 watts when used for telegraphy. In stations where a separate telegraph transmitter operable on the same frequencies as the main transmitter with an output power of less than 250 watts, is installed, the power reduction requirement does not apply. Such separate transmitters must not obtain power from the emergency power supply.

§ 80.255 Technical requirements for reserve transmitter.

(a) The following table describes the operating carrier frequency, emission, modulation and average ship station antenna power requirements for the reserve transmitter.

Operating frequency (kHz)	Frequency tolerance		Class of emission	Percentage modulation for amplitude modulation	Modulation for frequency for amplitude modulation	Power into an average ship station antenna
	Parts [1] in 10^6	Hz [2]				
500	[3] 1,000	20	A2A and A2B or H2A and H2B.	Not less than 70; not more 100.	At least 1 frequency between 300 and 1250 Hertz except for transmitters installed after July 1, 1951, at least 1 frequency between 450 and 1250 Hertz.	Not less than 25 watts.
410 and 1 working frequency in the band 415 to 525.	[3] 1,000	20	A2A and A3N or H2A and H3N.	......do	......do	......do

[1] For equipment type accepted or type approved before November 30, 1977.

[2] For equipment type accepted or type approved after November 29, 1977.

[3] Except for reserve transmitters whose use is confined solely to safety communications. Such transmitters must maintain a frequency tolerance of 3000 parts in 10^6.

(b) A reserve transmitter must operate at its required antenna power when adjusted to the operating frequency and energized by the reserve power supply of the ship station or by an equivalent power supply.

(c) A reserve transmitter must be equipped to measure antenna current.

(d) The antenna power must be determined at the operating carrier frequency by the product of the antenna resistance and the square of the average antenna current both measured at the same point in the antenna circuit at approximately gound potential.

§ 80.257 Manufacturing requirements for radiotelegraph automatic alarm receiver (auto alarm).

(a) The auto alarm must consist of:

(1) A radio receiver capable of receiving emissions of classes A1A, A1B, A2A, A2B, H2A, H2B, J2A, and J2B over the frequency range 496 through 504 kHz.

(i) The receiver must reject signals +106 dB above one microvolt at ±150 kHz from the center frequency and +88 dB above one microvolt at ±40 kHz from the center frequency.

(ii) The receiver must respond to signals from 100 microvolts to 1 volt on the center frequency. There must be less than 6 dB variation in sensitivity from 496 kHz through 504 kHz.

(2) A device capable of selecting the alarm signal specified under § 80.259 (a) and (b).

(3) A minimum of 3 audible alarm units to meet the three location installation requirements of § 80.259(g).

(4) A testing device to determine locally that the auto alarm system is operative.

(b) The auto alarm may be constructed in one or more units but must be independent of the ship's regular radio receiving apparatus.

(c) A telephone jack must be provided to permit reception by a telephone receiver.

(d) Tuning and timing controls must not be accessible from the exterior of the device.

(e) Once set into operation the audible alarms must continue to function until switches off in the principal radiotelegraph operating room.

(f) A nonlocking or momentary-throw switch must be provided to permit temporary disconnection of the audible alarm on the bridge and in the operator's quarters when the auto alarm system is being tested.

(g) A failure of the auto alarm power supply must activate the audible alarms.

(h) The auto alarm must operate within specifications throughout the temperature range 0-50 degrees Celsius at relative humidities as high as 95%.

(i) The auto alarm must be protected from excessive currents, power supply reversals and voltage variations which could cause damage to any component.

(j) The auto alarm must be capable of operating when subjected to vibrations having a frequency between 20 and 30 Hertz and an amplitude of 0.03 inch in a direction of an angle of 30 to 45 degrees with the base of the auto alarm.

§ 80.259 Technical requirements for radiotelegraph auto alarm receiver.

(a) For type acceptance the auto alarm in the absence of interference must be capable of being operated by four consecutive dashes whose length may vary from 6.0 to 3.5 seconds and the intervening spaces vary between 1.5 seconds to 10 milliseconds. These types of auto alarms must not respond to dashes longer than 6.31 seconds or shorter than 3.33 seconds nor to intervening spaces longer than 1.58 seconds or shorter than 5 milliseconds except as follows:

(1) Non-digital types employing resistance-capacitance timing, type approved before October 1, 1969, and placed in service on or before January 1, 1985, must not respond to dashes longer than 7.40 seconds or shorter than 2.80 seconds, nor to space intervals longer than 1.80 seconds or shorter than 5 milliseconds.

(2) Digital types employing a stable clock as the basic timing device, type approved before May 1, 1968, and placed in service on or before December 1, 1975, may accept dashes whose lower limits extends down to 3.0 seconds.

(b) The auto alarm must operate with a signal of 100 microvolts RMS at 500 kHz applied to an artificial antenna consisting of a 20 microhenry inductance, a 500 picofarad capacitor, and a 5 ohm resistor connected in series in the absence of any interference and without manual adjustment. It must be capable of operation under these conditions on the following classes of emission:

(1) A1B;

(2) A2B with a carrier modulated at any modulation percentage from 30 through 100 percent with any modulation frequency from 300 through 1350 Hertz; and

(3) H2B with a carrier keyed and emitted at any power level from 3 through 6 decibels below peak envelope power, with any modulation frequency from 300 through 1350 Hertz.

(c) The auto alarm must operate with signal levels up to 1 volt under normal operating conditions.

(d) The auto alarm warning device must not be activated by atmospherics or by any signal from the antenna other than the alarm signal.

(e) The auto alarms must respond to the alarm signal through non-continuous interference caused by atmospherics and powerful signals other than the alarm signal. In the presence of atmospherics or interfering signals, the auto alarm must automatically adjust itself within a reasonable time to the condition in which it can most readily distinguish the alarm signal.

(f) The auto alarm must respond without adjustment and with practically uniform sensitivity to signals over a band extending no less than 4 kHz on each side of the 500 kHz radiotelegraph frequency and with a minimum attenuation of:

5 dB at 495.0 kHz and 505.0 kHz
40 dB at 487.0 kHz and 513.0 kHz
80 dB at 475.0 kHz and 525.0 kHz

(g) When the auto alarm is activated it must sound continuously a warning in the radiotelegraph operating room, in the radio operator's cabin, and on the bridge.

(h) The auto alarm must include a 500 kHz signal generator and a keying device which automatically disconnects the auto alarm from the antenna when an alarm signal of 100 microvolts is applied to test the auto alarm.

§ 80.261 Technical requirements for automatic-alarm-signal keying device.

(a) The automatic-alarm-signal keying device may consist of one or more units.

(b) The device must be designed to activate the keying circuits of any transmitter approved by the Commission for use as a main or reserve transmitter.

(c) Timing-adjustment controls must not be accessible from the exterior of the device.

(d) The device must be able to repeatedly transmit the alarm signal. For this purpose the dashes transmitted must have a duration of 3.8 to 4.2 seconds, and spaces between each of the twelve dashes constituting a series must have a duration of 0.8 to 1.2 seconds. Spaces between each series of twelve dashes must have a duration of 0.8 second to one minute. This operation must be sustainable with power supply voltage variations of ±15%.

(e) A single control, protected to avoid accidental manipulation, must be provided for placing the device into full operation within 30 seconds. Once in operation, the device must be capable of continuous operation without attention for a least one hour.

(f) When the "on-off" control of the device is placed in the "off" position, the keying circuit to the radio transmitter(s) must be automatically opened.

(g) The automatic-alarm-signal keying device must be capable of operation from a power supply independent of ship power. It may operate from the radio station emergency power supply.

(h) Instructions for adjustment of the device and the correct indication of any instrument incorporated to reveal improper operation must be inscribed on a plate mounted on the device in a position to be easily read by the operator.

(i) The keying circuit must be capable of switching 0.75 amperes DC through a 32 ohms non-inductive resistance. If the automatic-alarm-signal keying device is also intended to be

with transmitters requiring a
circuit capability of 2 amperes
rough a 115 ohms non-inductive
nce, the keying circuit of the
must comply with this latter re-
ent.

The automatic-alarm-signal
device must operate within
cations throughout the temper-
ange 0-50 degrees Celsius at rel-
umidities as high as 95%.

The automatic-alarm-signal
device must be protected from
ve currents, power supply rever-
d voltage variations which could
amage to any component.

The automatic-alarm-signal
device must be capable of oper-
when subjected to vibrations
a frequency between 20 and 30
nd an amplitude of 0.03 inch in
ion at an angle of 30 to 45 de-
ith the base of the automatic-
ignal keying device.

Common requirements for sur-
l craft radio equipment.

dition to the requirements set
n §§ 80.265 and 80.267, survival
adio equipment must comply
e following:

ne radio equipment must be op-
vithout tools.

ach equipment must be provid-
an instruction manual cover-
design, installation, operation,
intenance of the equipment.

mple instructions for the oper-
the equipment must be promi-
nd permanently attached to it.
nstructions must include infor-
about the erection of the
(s), and automatic and manual
ssion of the international dis-
d alarm signals on 500 kHz.

n artificial antenna for test
s must be provided.

e survival craft radio transmit-
meet the following:

ust be pretuned to the required
cies. The operating frequencies
maintained within the pre-
tolerances under varying vol-
ntenna circuit characteristics,
er normal conditions of adjust-
nd shock or vibration. The fre-
control circuit adjustments
ot be readily available to the
using the transmitter;

(2) Antenna tuning controls must be provided on the operating panel. An initial adjustment of these controls must resonate the antenna circuit at each required operating radio frequency. Resonance must be maintained without further adjustment of the controls during a normal operating period of the transmitter;

(3) The front panel must contain controls for manual operation on 500 kHz, manual operation on 8364 kHz, and automatic operation alternately on these two frequencies. Not more than one manual switch adjustment must be necessary to transmit automatically. For manual radiotelegraphy the transmitter and receiver, including their controls, must be arranged so that they can be operated from the same operating position and the time necessary to change from transmission to recepition and vice versa must not exceed two seconds; and

(4) In automatic operation the radio must:

(i) On 500 kHz transmit the international radiotelegraph alarm signal followed by the international radiotelegraph distress signal, the latter to be transmitted in one or more separate groups, each group consisting of three separate distress signals;

(ii) On 8364 kHz transmit the international radiotelegraph distress signal in one or more separate groups, each group consisting of three separate distress signals; this group or these groups to be followed by a continuous long dash of not less than 30 seconds in duration;

(iii) Transmit the specified signals by automatically changing the operating frequency of the transmitter from 500 kHz to 8364 kHz and vice versa with a transfer time interval not to exceed one second;

(iv) Completely de-energize the receiver during operation of the transmitter;

(v) Be capable of testing the required automatic keying arrangement without the generation of radio frequency energy; and

(vi) For automatic transmission of the international radiotelegraph distress signal, not exceed 16 words per minute or be less than 8 words per minute. The alarm signal dashes must have a duration within the limits of 3.8 to 4.2 seconds, and the spaces between each of the 12 dashes constituting a series must have a duration within the limits of 0.8 to 1.2 seconds.

(f) Survival craft radio receivers must meet the following requirements:

(1) The receiver must be capable of receiving A2A or H2A emission over the 492-508 kHz band without manual tuning and when manually tuned must be capable of receiving A1A and A2A or H2A and J2A emission on any frequency in the 8320-8745 kHz band;

(2) The selectivity of the receiver preceeding the final detector must be flat within 6 dB over the band 492 to 508 kHz;

(3) The audio frequency response of the receiver must be flat within 6 dB over the range of frequencies between 400 and 1400 Hertz; and

(4) The receiver must be equipped with only one manually operated volume control.

(g) The artificial antenna must meet the following requirements:

(1) Provide a reliable test load for the transmitter at the frequencies 500 kHz and 8364 kHz of approximately the same electrical characteristics as the single wire or collapsible rod antenna required by this section;

(2) Be housed in a single container and provided with terminals. If more than two terminals are provided on the artificial antenna, all the terminals must be labelled; and

(3) Be prominently labelled "FOR TEST USE ONLY".

§ 80.265 Requirements for survival craft portable radio equipment.

(a) Survival craft portable radio equipment must be provided as a single portable buoyant unit consisting of a transmitter, receiver including headphones, power supply, grounding system, antenna system and line for lowering the apparatus. Each totally enclosed lifeboat must comply with the additional equipment requirements specified in this section:

(1) The radio must float in sea water and withstand a drop into sea water in various positions from a height of 6 meters (20 feet), without requiring repair or adjustment other than normal antenna tuning. The operating controls, indicating devices and instruments, including the headphones, must be protected against physical damage and from prolonged exposure to the weather. The radio must withstand submersion in sea water so that no part is less than 5 centimeters (2 inches) below the surface of the water for two hours without leaking;

(2) The radio must be fitted with handles or grips. It must be carryable by either one or two persons;

(3) The radio must be designed to attach to a lifeboat thwart by lashing or other acceptable means;

(4) The radio, exclusive of the line for lowering, must not weigh more than 27 kilograms (60 pounds). A radio for use in a totally enclosed lifeboat must not weigh more than 18 kilograms (40 pounds);

(5) The line for lowering must consist of not less than 12 meters (40 feet) of 9 thread manila or sisal rope, or the equivalent thereof, which must be securely attached to the radio at all times;

(6) All removable components necessary for the proper operation of the radio must be attached to this equipment;

(7) Each radio must have a durable removable plate showing clearly the survival craft radio call sign in letters and digits and in characters of the Morse code; and

(8) The maximum overall dimensions of the radio to be used in totally enclosed lifeboats including accessories must not exceed 35 by 40 by 50 centimeters (14 by 16 by 20 inches).

(b)(1) Portable survival craft radio transmitters must meet the following requirements:

Operating frequency (kHz)	Frequency tolerance		Type of emission	Modulation percentage (average of modulation percentage of positive and negative peaks	Modulation frequency	Average power output into specified artificial antenna	Artificial antenna
	Parts [1] in 10⁶	Hz [2]					
500	5,000	20	A2A and A2B or H2A and H2B.	Not less than 70.	Not less than 450 nor greater than 1350 Hertz.	Not less than 1.7 watts.	10 ohm resistance, 75 picofarads capacitance.
500	5,000	20	do	do	do	Not less than 2 watts [3].	15 ohms resistance, 100 picofarads capacitance.
364	200	50	A2A and A3N or H2A and H3N.	do	do	Not less than 4 watts.	40 ohms resistance.

[1] For equipment type accepted or type approved before November 30, 1977.
[2] For equipment type accepted or type approved after November 29, 1977.
[3] In the case of equipment type approved prior to May 26, 1965, the power output may be 1.7 watts into an artificial antenna f 10 ohms resistance and 75 picofarads capacitance.

(2) The transmitter must be quipped with a visual indicator or indicators such as neon tubes to show ntenna circuit resonance. Failure of he indicator(s) must not keep the ransmitter from operating.

(c) Portable survival craft receivers nust meet the following requirements:

(1) The audio output must be one milliwatt with a signal to noise power ratio of at least 10 to 1, when the receiver is supplied through the following artificial antennas with the respective radio frequency signals:

perating frequency, (kHz)	Signal strength (microvolts)	Modulation factor	Modulation (Hz)	Artificial antenna
0	25	0.3	400	10 ohms resistance and 100 picofarads capacitance.[1]
64	100	0.3	400	40 ohms resistance.

[1] In the case of equipment type approved prior to May 26, 1965, the artificial antenna may be 10 ohms resistance and 75 cofarads capacitance.

(2) The noise power present in the utput of the receiver when the receiv- r is adjusted for A2A or H2A emission n 500 kHz and 8364 kHz must be de- rmined with an unmodulated input gnal of the indicated strength.

(d) The power supply must meet the llowing requirements:

(1) The source of power must be a anually operated electric generator pable of energizing the survival aft radio installation. The mechani- l power applied to the crank andle(s) or the propelling lever(s) of e generator driving mechanism must t exceed a maximum of 0.15 horse- wer for any operation of the surviv- craft radio installation at any tem- rature of the generator and its asso- ated driving mechanism between inus 30 degrees and plus 50 degrees Celsius. Under these conditions the speed of rotation of the crank handle(s) must not be greater than 70 revolutions per minute nor must the cycles of operation of the propelling lever(s) be greater than 70 cycles per minute. The voltages applied to the radio installation must not vary from their normal values more than 20 percent at any generator speed in excess of the normal operating speed which can be manually developed.

(e) The antenna system must consist of a single wire antenna with a collapsible mast or a collapsible rod antenna conforming to the following requirements:

(1) The single wire antenna must be at least 12 meters (40 feet) of at least No. 10 AWG insulated extra-flexible stranded copper and include a means

for fastening the wire to the antenna supports, and means for making electrical connection to the transmitter;

(2) Each totally enclosed lifeboat must be provided with a collapsible rod antenna which operates in either a freestanding position or supported only by a grommet in the canopy of the lifeboat. The antenna must be capable of being erected from within of the enclosure. Antennas for use in totally enclosed lifeboats must be type accepted.

(f) The grounding system must consist of either a conducting wire or plate to provide an efficient ground for the portable survival craft equipment. The conducting wire must consist of a length of not less than 6 meters (20 feet) of No. 10 AWG bare stranded copper or equivalent copper braid weighted at one end for immersion in the sea. The ground plate must consist of a bare plate or strips of corrosion resistant metal having a total area of at least .6 square meters (6.5 square feet) and must be located on the hull of the lifeboat below the waterline. The electrical connection to the grounding conductor or to the ground plate must be made from inside the lifeboat.

§ 80.267 Requirements for survival craft nonportable radio equipment.

(a)(1) The radio transmitter must meet the following requirements:

Operating frequency (kHz)	Frequency tolerance		Type of emission	Modulation percentages (average of modulation percentage of positive and negative peaks)	Modulation frequency	Average power output into specified artificial antenna	Artifical antenna
	Parts [1] in 10^6	HZ [2]					
500	5,000	20	A2A and A2B or H2A and H2B.	Not less than 70.	Not less than 450 nor greater than 1350 Hertz.	Not less than 30 watts.	10 ohms resistance and 100 picofarads capacitance
8364	200	50	A2A or H2A Ides.	do	do	Not less than 40 watts.	40 ohms resistance.

[1] For equipment type accepted or type approved before November 30, 1977.
[2] For equipment type accepted or type approved after November 29, 1977.

(2) The transmitter must have an antenna current meter.

(b) Survival craft non-portable receivers must meet the following requirements:

(1) The audio output must be one milliwatt at a signal to noise power ratio of at least 10 to 1, when the receiver is supplied through the following artificial antennas with the respective radio frequency signals:

Operating frequency, (kHz)	Signal strength (microvolts)	Modulation factor	Modulation (Hz)	Artificial antenna
500	200	0.3	400	15 ohms resistance and 100 picofarads capacitance
8364	1,000	0.3	400	40 ohms resistance.

(2) When the receiver is adjusted for A2A or H2A emission on 500 kHz and 8364 kHz the noise power present in the output of the receiver must be determined with an unmodulated input signal of the indicated strength;

(3) The audio output of the receiver must be capable of at least 8 dB above one milliwatt at the rated loan impedance.

§ 80.269 Technical requirements for radiotelephone distress frequency watch receiver.

(a) The radiotelephone distress frequency watch receiver is comprised of

receiver, a loudspeaker and a radio-
elephone auto alarm device.

(b) The radiotelephone distress fre-
uency watch receiver must meet the
ollowing requirements:

(1) The receiver must be capable of
eing switched to 2182 kHz and of re-
eiving signals of at least A2A, A2B,
2A and H2B emissions;

(2) The receiver sensitivity must pro-
de a SINAD of 20 dB at the audio
tput when a 30 microvolt signal
th A2A, A2B, H2A, or H2B emission
odulated 30% at 400 Hz is applied to
e receiver RF terminals;

3) The audio output of the receiver
ist be at least 50 milliwatts at the
ted load impedance;

4) The receiver must be provided
h an auto alarm device which
tes the receiver (silences the loud-
eaker) unless the radiotelephone
rm signal or the signal preceeding a
al navigational warning is received.
en the auto alarm is activated the
eiver audio output level must be
der than the output level of the re-
ed speech signal. Additionally, the
eiver must meet the following re-
rements:

) When the receiver is muted its
io output power must be less than
illiwatt;

i) If tone filters are used to process
1300 Hz and 2200 Hz tones the tol-
nce of their center frequency must
±1.5 percent of the alerting fre-
ncy. The response must be flat
ain 6 dB to ±3% of the center fre-
ncy of the filters; and

i) The receiver must not be un-
ed by atmospherics or by strong
als other than the radiotelephone
m and the vital navigational warn-
ignal.

The receiver must be unmuted
in 4 to 6 seconds when a double
and alarm signal modulated at
is applied at its input terminals at
el which produces a SINAD of 10
nder the following conditions:

For radiotelephone alarm the
l must be modulated sequentially
1300 ±20 Hz tone and a 2200 ±35
one. The duration of each tone
be 250 ±50 milliseconds and the
d between each tone must not
d 50 milliseconds; and

(ii) For navigational warning the signal must be modulated by a 2200 ±35 Hz tone and the modulated carrier must be turned "on" for 250 ±50 milliseconds and then "off" for 250 ±50 milliseconds.

(6) The receiver must not be unmuted when a double sideband signal of 70 dB above the receiver measured sensitivity, modulated at 70% by a 2200 ±35 Hz tone with the following durations is applied at its input terminals:

(i) "On" periods of less than 175 milliseconds or more than 325 milliseconds followed by "off" periods of any duration; and

(ii) "Off" periods of less than 175 milliseconds or more then 425 milliseconds followed by "on" periods of any duration.

(7) The controls listed below must be provided on the exterior of the equipment:

(i) On/off switch with a visual indication that the device is on;

(ii) Volume control to adjust the audio output;

(iii) Control for dimming any light on the equipment;

(iv) Control for switching the auto alarm in and out of operation; and

(v) Control to manually reset the auto alarm to muted condition.

(8) The receiver must operate within specifications throughout the temperature range 0–50 degrees Celsius at relative humidities as high as 95%.

(9) The receiver must be capable of operating when subjected to vibrations having a frequency between 20 and 30 Hertz and an amplitude of 0.03 inch in a direction at an angle of 30 to 45 degrees with the base of the auto alarm.

§ 80.271 Technical requirements for portable survival craft radiotelephone transceivers.

(a) Portable survival craft radiotelephone transceivers must comply with the following:

(1) The transceivers must receive and transmit either on 457.525 MHz or on 156.800 MHz;

(2) The receiver must comply with the requirements in part 15, subpart C of this chapter and must have a sensitivity of not more than 2 microvolts. The sensitivity requirement must be

met using the receiver sensitivity measurement procedure specified in the Radio Technical Commission for Marine Services (RTCM) Special Committee No. 66 Report MMS-R2;

(3) The effective radiated power of the transmitter must be at least 0.1 watt;

(4) The transceivers must be battery powered and operate for at least four hours with a transmit to receive ratio of 1:9 with no significant adverse effect upon the performance of the device;

(5) The transceivers must have a permanently attached waterproof label with the statement "Complies with the FCC requirements for survival craft two-way radiotelephone equipment"; and

(6) The antenna must be permanently attached to the device or its removal must require the use of a special tool.

(b) Portable radiotelephone transceivers that are already type accepted may be used to satisfy the survival craft radiotelephone requirement until October 1, 1993, provided the device meets the technical requirements in paragraphs (a)(1) through (3) of this section.

(c) Survival craft radiotelephone equipment installed after October 1, 1988, must be type accepted to meet the requirements of this section.

(d) After October 1, 1993, all portable radiotelephone transceivers that are used to satisfy the survival craft radiotelephone requirement must have been type accepted to meet the requirements of this section.

(e) Portable radiotelephone transceivers which are type accepted to meet the requirements of this section must be identified by an appropriate note in the Commission's Radio Equipment List.

§ 80.273 Technical requirements for radar equipment.

The technical requirements for radar equipment are contained in § 80.825.

Subpart G—Safety Watch Requirements and Procedures

COAST STATION SAFETY WATCHES

§ 80.301 Watch requirements.

(a) Each public coast station operating on telegraphy frequencies in the band 405-535 kHz must maintain a watch for classes A1A, A2B and H2B emissions by a licensed radiotelegraph operator on the frequency 500 kHz for three minutes twice each hour, beginning at x h.15 and x h.45 Coordinated Universal Time (UTC).

(b) Each public coast station licensed to operate in the band 1605-3500 kHz must monitor such frequency(s) as are used for working or, at the licensee's discretion, maintain a watch on 2182 kHz.

(c) Except for distress, urgency or safety messages, coast stations must not transmit on 2182 kHz during the silence periods for three minutes twice each hour beginning at x h.00 and x h.30 Coordinated Universal Time (UTC).

(d) Each public coast station must provide assistance for distress communications when requested by the Coast Guard.

§ 80.302 Notice of discontinuance, reduction, or impairment of service involving a distress watch.

(a) When changes occur in the operation of a public coast station which include discontinuance, reduction or suspension of a watch required to be maintained on 500 kHz, 2182 kHz, or 156.800 MHz, notification must be made by the licensee to the nearest district office of the U.S. Coast Guard as soon as practicable. The notification must include the estimated or known resumption time of the watch.

§ 80.303 Watch on 156.800 MHz (Channel 16).

(a) During its hours of operation, each coast station operating in the 156-162 MHz band and serving rivers, bays and inland lakes except the Great Lakes, must maintain a safety watch on the frequency 156.800 MHz except when transmitting on 156.800 MHz.

(b) A coast station may be exempted from compliance with the watch requirement when Federal, State or Local Government stations maintain a watch on 156.800 MHz over 95% of the coast station's service area. Requests for an exemption must include a chart showing the receiving service area of the inland water public coast station. The coordinates, to the nearest minute, and the receiving service area of the Government stations maintaining the continuous watch on 156.800 MHz must be indicated on the same chart. The service area of these stations must be calculated using criteria specified in subpart P of this part.

(c) If the government station(s) providing the 156.800 MHz watch over the service area of an exempt station temporarily discontinues that watch, the exempt coast station upon receiving notice of this condition must maintain the watch on 156.800 HMz during the discontinuance. Automated maritime communications systems' compliance with this requirement is limited to the use of existing facilities.

[51 FR 31213, Sept. 2, 1986, as amended at 52 FR 35245, Sept. 18, 1987]

SHIP STATION SAFETY WATCHES

§ 80.304 Watch requirement during silence periods.

(a) Each ship station operating on telegraphy frequencies in the band 405-535 kHz, must maintain a watch on the frequency 500 kHz of three minutes twice each hour beginning at x h.15 and x h.45 Coordinated Universal Time (UTC) by a licensed radiotelegraph officer using either a loudspeaker or headphone.

(b) Each ship station operating on elephony on frequencies in the band 1605-3500 kHz must maintain a watch on the frequency 2182 kHz. This watch must be maintained at least wice each hour for 3 minutes commencing at x h.00 and x h.30 Coordinated Universal Time (UTC) using ither a loudspeaker or headphone. Expect for distress, urgency or safety messages, ship stations must not transmit during the silence periods on 2182 kHz.

§ 80.305 Watch requirements of the Communications Act and the Safety Convention.

(a) Each ship of the United States which is equipped with a radiotelegraph station for compliance with Part II of Title III of the Communications Act or Chapter IV of the Safety Convention must:

(1) Keep a continuous and efficient watch on 500 kHz by means of radio officers while being navigated in the open sea outside a harbor or port. In lieu thereof, on a cargo ship equipped with a radiotelegraph auto alarm in proper operating condition, an efficient watch on 500 kHz must be maintained by means of a radio officer for at least 8 hours per day in the aggregate, i.e., for at least one-third of each day or portion of each day that the vessel is navigated in the open sea outside of a harbor or port.

(2) Keep a continuous and efficient watch on the radiotelephone distress frequency 2182 kHz from the principal radio operating position or the room from which the vessel is normally steered while being navigated in the open sea outside a harbor or port. A radiotelephone distress frequency watch receiver having a loudspeaker and a radiotelephone auto alarm facility must be used to keep the continuous watch on 2182 kHz if such watch is kept from the room from which the vessel is normally steered. After a determination by the master that conditions are such that maintenance of the listening watch would interfere with the safe navigation of the ship, the watch may be maintained by the use of the radiotelephone auto alarm facility alone.

(3) Keep a continuous and efficient watch on the VHF distress frequency 156.800 MHz from the room from which the vessel is normally steered while in the open sea outside a harbor or port. The watch must be maintained by a designated member of the crew who may perform other duties, relating to the operation or navigation of the vessel, provided such other duties do not interfere with the effectiveness of the watch. Use of a properly adjusted squelch or brief interruptions due to other nearby VHF trans-

missions are not considered to adversely affect the continuity or efficiency of the required watch on the VHF distress frequency. This watch need not be maintained by vessels subject to the Bridge-to-Bridge Act and participating in a Vessel Traffic Services (VTS) system as required or recommended by the U.S. Coast Guard, when an efficient listening watch is maintained on both the bridge-to-bridge frequency and a separate assigned VTS frequency.

(b) Each cargo ship of the United States which is equipped with a radiotelephone station for compliance with Part II of Title III of the Communications Act or Chapter IV of the Safety Convention must while being navigated outside of a harbor or port:

(1) Keep a continuous watch on 2182 kHz in the room from which the vessel is normally steered while at sea, whenever such station is not being used for authorized traffic. Such watch must be maintained by at least one officer or crewmember who may perform other duties relating to the operation or navigation of the vessel, provided such other duties do not interfere with the watch. A radiotelephone watch receiver having a loudspeaker and a radiotelephone auto alarm must be used to keep the continuous watch on 2182 kHz. After a determination by the master that maintenance of the watch would interfere with the safe navigation of the ship, the watch may be maintained by use of the radiotelephone auto alarm facility alone.

(2) Keep a continuous watch on 156.800 MHz from the room from which the vessel is normally steered. The watch must be maintained by a crewmember who may perform other duties, relating to the operation or navigation of the vessel, provided such other duties do not interfere with the watch. Use of properly adjusted squelch of brief interruptions due to other nearby VHF transmissions are not considered to adversely affect the watch. This watch need not be maintained by vessels subject to the Bridge-to-Bridge Act and participating in a Vessel Traffic Services (VTS) system when a watch is maintained on both the bridge-to-bridge frequency and a VTS frequency.

(c) Each vessel of the United States transporting more than six passengers for hire, which is equipped with a radiotelephone station for compliance with Part III of Title III of the Communications Act must, while being navigated in the open sea or any tidewater within the jurisdiction of the United States adjacent or contiguous to the open sea, keep a continuous watch on 2182 kHz while the vessel is beyond VHF communication range of the nearest VHF coast station, whenever the radiotelephone station is not being used for authorized traffic. A VHF watch must be kept on 156.800 MHz whenever such station is not being used for authorized traffic. The VHF watch must be maintained at the vessel's steering station actually in use by the qualified operator as defined by § 80.157 or by a crewmember who may perform other duties relating to the operation or navigation of the vessel, provided such other duties do not interfere with the watch. The use of a properly adjusted squelch is not considered to adversely affect the watch. The VHF watch need not be maintained by vessels subject to the Bridge-to-Bridge Act and participating in a Vessel Traffic Services (VTS) system when an efficient listening watch is maintained on both the bridge-to-bridge frequency and a VTS frequency.

§ 80.306 Provisions governing the radiotelegraph watch.

(a) The radio officer must use the main or reserve receiver, and either headphones or a loudspeaker to keep the watch on 500 kHz.

(b) During the watch, the radio officer may temporarily interrupt the required watch on 500 kHz while transmitting or receiving signals or messages to or from a station but only if it is not feasible to simultaneously handle such traffic and listen on 500 kHz by split headphones or a loudspeaker. The watch on 500 kHz must, however, without exception be maintained during the silence periods.

(c) During this watch, on vessels subject to the Communications Act and the Safety Convention on international voyages, the radio officer may disinue listening when handling traffic on other frequencies or performing r essential radio duties, but only if impracticable to listen by split phones or loudspeaker. The h must always be maintained by a officer using headphones or speaker during the silence peri- The term "essential radio duties" is rule includes urgent repairs of communication equipment used afety or radio navigational equip- by order of the master.

When authorized by the master, adio officer may perform mainte- e repair of communications, navi- n or other electronic equipment de of the radiotelegraph room, ded that the listening watch on kHz can be maintained by head- es, loudspeakers, portable receiv- or other suitable means. The n on 500 kHz must be maintained e radiotelegraph room during the e period.

7 Compulsory use of radiotelegraph to alarm.

radiotelegraph auto alarm re- d on a cargo ship subject to the telegraph provisions of Part II of III of the Communications Act e Safety Convention must be in tion, connected to the main an- and adjusted for optimum effi- at all times while the ship is navigated in the open sea when o officer is not listening on the ency 500 kHz, except under the nstances as set forth in 06(b).

8 Watch required by the Great kes Radio Agreement.

Each ship of the United States equipped with a radiotelephone for compliance with the Great Radio Agreement must when way keep a watch on:

56.800 MHz on board a vessel 20 (65 feet) and over in length, a engaged in towing (See 1(b)), or a vessel carrying more passengers for hire. This watch e maintained whenever the sta- not being used for authorized . However, a watch on 156.800 need not be maintained by a maintaining a watch on the bridge-to-bridge frequency 156.650 MHz *and* participating in a Vessel Traffic Services (VTS) system and maintaining a watch on the specified VTS frequency.

(2) 156.650 MHz on board a vessel 38 meters (124 feet) and over in length, a vessel engaged in towing (See § 80.951(b)), or a vessel carrying more than six passengers for hire. This watch must be maintained continuously and effectively. Sequential monitoring is not sufficient. Portable VHF equipment may be used to meet this requirement. Vessels are exempted from this requirement while transiting the St. Lawrence Seaway and complying with the Joint Regulations of the St. Lawrence Seaway Authority and St. Lawrence Seaway Development Corporation between the lower exit of St. Lambert Lock at Montreal and Crossover Island, New York and in the Welland Canal and approaches between Calling in Point No. 15 and No. 16.

(b) The watch must be maintained by the master, or person designated by the master, who may perform other duties provided they do not interfere with the effectiveness of the watch.

[53 FR 17052, May 13, 1988]

§ 80.309 Watch required by the Bridge-to-Bridge Act.

All vessels subject to the Bridge-to-Bridge Act must keep a watch on the designated navigational frequency. The watch must be maintained by the master or person in charge of the vessel or the person designated by the master or person in charge to pilot or direct the movement of the vessel. The person standing watch may perform other duties provided such other duties do not interfere with the watch.

§ 80.310 Watch required by voluntary vessels.

Voluntary vessels must maintain a watch on 156.800 MHz whenever the radio is operating and is not being used to communicate.

DISTRESS, ALARM, URGENCY AND SAFETY PROCEDURES

§ 80.311 Authority for distress transmission.

A mobile station in distress may use any means at its disposal to attract attention, make known its position, and obtain help. A distress call and message, however, must be transmitted only on the authority of the master or person responsible for the mobile station. No person shall knowingly transmit, or cause to be transmitted, any false or fraudulent signal of distress or related communication.

§ 80.312 Priority of distress transmissions.

The distress call has absolute priority over all other transmissions. All stations which hear it must immediately cease any transmission capable of interfering with the distress traffic and must continue to listen on the frequency used for the emission of the distress call. This call must not be addressed to a particular station. Acknowledgement of receipt must not be given before the distress message which follows it is sent.

§ 80.313 Frequencies for use in distress.

The frequencies specified in the bands below are for use by mobile stations in distress. The conventional emission is shown. When a ship station cannot transmit on the designated frequency or the conventional emission, it may use any available frequency or emission. Frequencies for distress and safety calling using digital selective calling techniques are listed in § 80.359(b). Distress and safety NB-DP frequencies are indicated by footnote 2 in § 80.361(b).

Frequency band	Emission	Carrier frequency
405–535 kHz	A2B	500 kHz.
1605–3500 kHz	J3E	2182 kHz.
4000–27, 5000 kHz	A2B	8364 kHz.
118–136 MHz	A3E	121.500 MHz.
156–162 MHz	F3E, PON	156.800 MHz 156.750 MHz.
243 MHz	A3N	243.000 MHz.

The maximum transmitter power obtainable may be used.

[51 FR 31213, Sept. 2, 1986; 51 FR 34984, Oct. 1, 1986]

§ 80.314 Distress signals.

(a) The international radiotelegraphy distress signal consists of the group "three dots, three dashes, three dots" (... ---...), symbolized herein by SOS, transmitted as a single signal in which the dashes are slightly prolonged so as to be distinguished clearly from the dots.

(b) The international radiotelephone distress signal consists of the word MAYDAY, pronounced as the French expression "m'aider".

(c) These distress signals indicate that a mobile station is threatened by grave and imminent danger and requests immediate assistance.

§ 80.315 Distress calls.

(a) The radiotelegraph distress call consists of:

(1) The distress signal SOS, sent three times;

(2) The word DE;

(3) The call sign of the mobile station in distress, sent three times.

(b) The radiotelephone distress call consists of:

(1) The distress signal MAYDAY spoken three times;

(2) The words THIS IS;

(3) The call sign (or name, if no call sign assigned) of the mobile station in distress, spoken three times.

§ 80.316 Distress messages.

(a) The radiotelegraph distress message consists of:

(1) The distress signal SOS;

(2) The name of the mobile station in distress;

(3) Particulars of its position;

(4) The nature of the distress;

(5) The kind of assistance desired;

(6) Any other information which might facilitate rescue.

(b) The radiotelephone distress message consists of:

(1) The distress signal MAYDAY;

(2) The name of the mobile station in distress;

(3) Particulars of its position;

(4) The nature of the distress;

(5) The kind of assistance desired;

(6) Any other information which might facilitate rescue, for example, the length, color, and type of vessel, number of persons on board.

(c) As a general rule, a ship must signal its position in latitude and longitude, using figures for the degrees and minutes, together with one of the words NORTH or SOUTH and one of the words EAST or WEST. In radiotelegraphy, the signal .-.-.- must be used to separate the degrees from the minutes. When practicable, the true bearing and distance in nautical miles from a known geographical position may be given.

§ 80.317 Radiotelegraph and radiotelephone alarm signals.

(a) The international radiotelegraph alarm signal consists of a series of twelve dashes sent in one minute, the duration of each dash being four seconds and the duration of the interval between consecutive dashes one second. The purpose of this special signal is the actuation of automatic devices giving the alarm to attract the attention of the operator when there s no listening watch on the distress requency.

(b) The international radiotelephone larm signal consists of two substan- ially sinusoidal audio frequency tones ransmitted alternately. One tone nust have a frequency of 2200 Hertz nd the other a frequency of 1300 lertz, the duration of each tone being 50 milliseconds. When generated by utomatic means, the radiotelephone larm signal must be transmitted con- nuously for a period of at least 30 econds, but not exceeding one inute; when generated by other eans, the signal must be transmitted s continuously as practicable over a eriod of approximately one minute. he purpose of this special signal is to tract the attention of the person on atch or to actuate automatic devices ving the alarm.

0.318 Use of alarm signals.

a) The radiotelegraph or radiotele- one alarm signal, as appropriate, ust only be used to announce:

1) That a distress call or message is out to follow;

(2) The transmission of an urgent cyclone warning. In this case the alarm signal may only be used by coast stations authorized by the Commission to do so; or

(3) The loss of a person or persons overboard. In this case the alarm signal may only be used when the assistance of other ships is required and cannot be satisfactorily obtained by the use of the urgency signal only, but the alarm signal must not be repeated by other stations. The message must be preceded by the urgency signal.

(b) In cases described in paragraphs (a)(2) and (3) of this section, the transmission of the warning or message by radiotelegraphy must not begin until two minutes after the end of the radiotelegraph alarm signal.

§ 80.319 Radiotelegraph distress call and message transmission procedure.

(a) The radiotelegraph distress procedure consists of the following six steps: however, when time is vital, the first and second steps may be omitted. These two steps of the distress procedure may also be omitted in circumstances when transmission of the alarm signal is considered unnecessary:

(1) The radiotelegraph alarm signal;

(2) The distress call and an interval of two minutes;

(3) The distress call;

(4) The distress message;

(5) Two dashes of ten to fifteen seconds each;

(6) The call sign of the mobile station in distress.

(b) The radiotelegraph distress transmissions must be sent by means of the international Morse code at a speed not exceeding 16 words per minute nor less than 8 words per minute.

(c) The distress message, preceded by the distress call, must be repeated at intervals, especially during the 500 kHz international silence periods, until an answer is received. The radiotelegraph alarm signal may also be repeated, if necessary.

(d) The transmissions under paragraphs (a)(5) and (6) of this section, which are to permit direction finding stations to determine the position of the station in distress, may be repeated at frequent intervals if necessary.

(e) When the mobile station in distress receives no answer to a distress message transmitted on the distress frequency, the message may be repeated on any other available frequency on which attention might be attracted.

§ 80.320 Radiotelephone distress call and message transmission procedure.

(a) The radiotelephone distress procedure consists of:

(1) The radiotelephone alarm signal (whenever possible);

(2) The distress call;

(3) The distress message.

(b) Radiotelephone distress transmissions must be made slowly and distinctly, each word being clearly pronounced to facilitate transcription.

(c) After the transmission by radiotelephony of its distress message, the mobile station may be requested to transmit suitable signals followed by its call sign or name, to permit direction-finding stations to determine its position. This request may be repeated at frequent intervals if necessary.

(d) The distress message, preceded by the distress call, must be repeated at intervals until an answer is received. This repetition must be preceded by the radiotelephone alarm signal whenever possible.

(e) When the mobile station in distress receives no answer to a distress message transmitted on the distress frequency, the message may be repeated on any other available frequency on which attention might be attracted.

§ 80.321 Acknowledgement of receipt of distress message.

(a) Stations of the maritime mobile service which receive a distress message from a mobile station which is beyond any possible doubt in their vicinity must immediately acknowledge receipt. However, in areas where reliable communication with one or more coast stations is practicable, ship stations may defer this acknowledgement for a short interval so that a coast station may acknowledge receipt.

(b) Stations of the maritime mobile service which receive a distress message from a mobile station which beyond any possible doubt is not in their vicinity, must allow a short interval of time to elapse before acknowledging receipt of the message in order to permit stations nearer to the mobile station in distress to acknowledge receipt without interference.

§ 80.322 Form of acknowledgement.

(a) The acknowledgement of receipt of a radiotelegraph distress message is transmitted in the following form:

(1) The distress signal SOS;

(2) The call sign of the station sending the distress message, sent three times;

(3) The word DE;

(4) The call sign of the station acknowledging receipt, sent three times;

(5) The group RRR;

(6) The message signal SOS.

(b) The acknowledgement of receipt of a radiotelephone distress message is transmitted in the following form:

(1) The distress signal MAYDAY;

(2) The call sign or other identification of the station sending the distress message, spoken three times;

(3) The words THIS IS;

(4) The call sign or other identification of the station acknowledging receipt, spoken three times;

(5) The word RECEIVED;

(6) The distress signal MAYDAY.

§ 80.323 Information furnished by an acknowledging station.

(a) Every mobile station which acknowledges receipt of a distress message must on the order of the master or person responsible for the ship, aircraft, or other vehicle carrying such mobile station, transmit as soon as possible the following information in the order shown:

(1) Its identifier;

(2) Its position;

(3) The speed at which it is proceeding towards, and the approximate time it will take to reach the mobile station in distress.

(b) Before sending this message, the station must ensure that it will not interfere with the emissions of other stations better situated to render immediate assistance to the station in distress.

§ 80.324 Transmission of distress message by station not itself in distress.

(a) A mobile station or a land station which learns that a mobile station is in distress must transmit a distress message in any of the following cases:

(1) When the station in distress cannot transmit the distress message.

(2) When the master or person responsible for the ship, aircraft, or other vehicle not in distress, or for the land station, believes that further help is necessary.

(3) When, although not in a position to assist, it has heard a distress message which has not been acknowledged. When a mobile station transmits such a distress message, it must notify the authorities who may be able to assist.

(b) Transmission must be made on the international distress frequencies or on any other available frequency on which attention might be attracted.

(c) Transmission of the distress message must always be preceded by the call indicated below, which must itself be preceded whenever possible by the radiotelegraph or radiotelephone alarm signal. This call consists of:

(1) When radiotelegraphy is used:

(i) The signal DDD SOS SOS SOS DDD:

(ii) The word DE;

(iii) The call sign of the transmitting station, sent three times.

(2) When radiotelephony is used:

(i) The signal MAYDAY RELAY, spoken three times;

(ii) The words THIS IS;

(iii) The call sign or other identification of the transmitting station, spoken three times.

(d) When the radiotelegraph alarm signal is used, an interval of two minutes must be allowed, whenever this is considered necessary, before the transmission of the call mentioned in paragraph (c)(1) of this section.

§ 80.325 Control of distress traffic.

(a) Distress traffic consists of all messages relating to the immediate assistance required by the mobile station in distress. In distress traffic, the distress signal must be sent before the call and at the beginning of the preamble of any radiotelegram.

(b) The control of distress traffic is the responsibility of the mobile station in distress or of the station which has sent the distress message. These stations may delegate the control of the distress traffic to another station.

(c) The station in distress or the station in control of distress traffic may impose silence either on all stations of the mobile service in the area or on any station which interferes with the distress traffic. It must address these instructions "to all stations" or to one station only, according to circumstances. In either case, it must use one of the following signals which are reserved for use by the mobile station in distress and for the station controlling distress traffic:

(1) In radiotelegraphy, the abbreviation QRT, followed by the distress signal SOS.

(2) In radiotelephony, the signal SEELONCE MAYDAY.

(d) If essential, any station of the mobile service near the ship, aircraft, or other vehicle in distress may also impose silence. It must use for this purpose:

(1) In radiotelegraphy, the abbreviation QRT, followed by the word DISTRESS and its own call sign;

(2) In radiotelephony, the word SEELONCE, followed by the word DISTRESS and its own call sign or other identification.

§ 80.326 Notification of resumption of normal working.

(a) When distress traffic has ceased, or when complete silence is no longer necessary on a frequency which has been used for distress traffic, the station which has controlled this traffic must transmit on that frequency a message addressed "to all stations" indicating that normal working may be resumed.

(1) In radiotelegraphy, this message consists of:

(i) The distress signal SOS;

(ii) The call "to all stations" (CQ), sent three times;

(iii) The word DE;

(iv) The call sign of the station sending the message;

(v) The time of handing in the message;

(vi) The name and call sign of the mobile station which was in distress;

(vii) The service abbreviation QUM.

(2) In radiotelephony, this message consists of:

(i) The distress signal MAYDAY;

(ii) The call "Hello all stations", spoken three times;

(iii) The words THIS IS;

(iv) The call sign or other identification of the station sending the message;

(v) The time of handing in of the message;

(vi) The name and call sign of the mobile station which was in distress;

(vii) The words SEELONCE FEENEE OR PRU-DONCE.

(b) Until they receive the foregoing message indicating that normal or limited working may be resumed, all stations which are aware of the distress traffic, and which are not taking part in it, are forbidden to transmit on the frequencies on which the distress traffic is taking place.

§ 80.327 Urgency signals.

(a) The urgency signal indicates that the calling station has a very urgent message to transmit concerning the safety of a ship, aircraft, or other vehicle, or the safety of a person. The urgency signal must be sent only on the authority of the master or person responsible for the mobile station.

(b) In radiotelegraphy, the urgency signal consists of three repetitions of the group XXX, sent with the individual letters of each group, and the successive groups clearly separated from each other. It must be transmitted before the call.

(c) In radiotelephony, the urgency signal consists of three oral repetitions of the group of words PAN PAN transmitted before the call.

(d) The urgency signal has priority over all other communications except distress. All mobile and land stations which hear it must not interfere with the transmission of the message which follows the urgency signal.

[51 FR 31213, Sept. 2, 1986, as amended at 52 FR 35245, Sept. 18, 1987]

§ 80.328 Urgency message.

(a) The urgency signal and call, and the message following it, must be sent on one of the international distress frequencies. Stations which cannot transmit on a distress frequency may use any other available frequency on which attention might be attracted.

(b) Mobile stations which hear the urgency signal must continue to listen for at least three minutes. At the end of this period, if no urgency message has been heard, they may resume their normal service. However, land and mobile stations which are in communication on frequencies other than those used for the transmission of the urgency signal and of the call which follows it may continue their normal work without interruption provided the urgency message is not addressed "to all stations".

(c) When the urgency signal has been sent before transmitting a message "to all stations" which calls for action by the stations receiving the message, the station responsible for its transmission must cancel it as soon as it knows that action is no longer necessary. This message of cancellation must likewise be addressed "to all stations".

§ 80.329 Safety signals.

(a) The safety signal indicates that the station is about to transmit a message concerning the safety of navigation or giving important meteorological warnings.

(b) In radiotelegraphy, the safety signal consists of three repetitions of the group TTT, sent with the individual letters of each group, and the successive groups clearly separated from each other. It must be sent before the call.

(c) In radiotelephony, the safety signal consists of the word SECURITE, pronounced as in French, spoken three times and transmitted before the call.

(d) The safety signal and call must be sent on one of the international distress frequencies (500 kHz or 8364 kHz radiotelegraph; 2182 kHz or 156.8 MHz radiotelephone). Stations which cannot transmit on a distress frequency may use any other available frequency on which attention might be attracted.

0 Safety message.

The safety signal and call must
llowed by the safety message.
e practicable, the safety message
l be sent on a working frequen-
nd a suitable announcement to
ffect must be made at the end of
ll.
Except for the cases mentioned
agraph (c) of this section, the
signal when sent on the fre-
y 500 kHz must be transmitted
l the end of the first available si-
period; the safety message must
nsmitted immediately after the
period.
Messages about meteorological
ngs, of cyclones, dangerous ice,
ous wrecks, or any other immi-
danger to marine navigation
e preceded by the safety signal.
Stations hearing the safety
must not make any transmis-
kely to interfere with the mes-

Bridge-to-bridge communication
cedure.

essels subject to the Bridge-to-
Act transmitting on the desig-
navigational frequency must
t communications in a format
to those given below:
his is the (name of vessel). My
n is (give readily identifiable po-
course and speed) about to (de-
ontemplated action). Out.
essel off (give a readily identifi-
sition). This is (name of vessel)
ve a readily identifiable posi-
plan to (give proposed course
n). Over.
Coast station), this is (vessel's
off (give readily identifiable po-
I plan to (give proposed course
n). Over.
essels acknowledging receipt
swer "(Name of vessel calling).
(Name of vessel answering).
d your call," and follow with
cation of their intentions. Com-
tions must terminate when
ip is satisfied that the other no
poses a threat to its safety and
l with "Out".
e of power greater than 1 watt
idge-to-bridge station shall be
to the following three situa-

(1) Emergency.

(2) Failure of the vessel being called to respond to a second call at low power.

(3) A broadcast call as in paragraph (a)(1) of this section in a blind situation, e.g., rounding a bend in a river.

§ 80.332 Equipment to aid search and rescue operations.

(a) Survival craft stations may transmit distress, urgency and safety signals, calls and messages.

(b) EPIRB's may transmit only in accordance with the requirements of subparts V and X of this part.

§ 80.333 Stations in the maritime mobile-satellite service.

The provisions of §§ 80.311 and 80.324 apply to the operations of ship earth stations in the maritime mobile-satellite service.

Subpart H—Frequencies

RADIOTELEGRAPHY

§ 80.351 Scope.

The following sections describe the carrier frequencies and general uses of radiotelegraphy with respect to the following:

—Distress, urgency, safety, call and reply.
—Working.
—Digital selective calling (DSC).
—Narrow-band direct-printing (NB-DP).
—Facsimile.

§ 80.353 General uses—radiotelegraphy.

(a) Unless otherwise indicated radiotelegraphy may be used by ship and public coast stations only.

(b) The signal code for Morse telegraphy must be the international Morse code signals specified in the Telegraph Regulations annexed to the International Telecommunication Convention.

(c) To facilitate communications, ship stations transmitting by means of radiotelegraphy must use the service abbreviations ("Q" signals) listed in Appendix 14 to the ITU Radio Regulations whenever practicable.

(d) In order to reduce interference stations must attempt to select calling frequencies which provide the most favorable propagational characteristics for effecting reliable communications.

(e) Coast stations may apply to use for telegraphy communications any additional coast station frequencies that are allocated for such communications in the 10-27500 kHz band that are not listed in this part. See the Table of Frequency allocations in § 2.106 of this chapter. The use of such frequencies will be authorized initially with a six month provisional period.

(f) Radiotelegraphy stations communicating with a Government station may transmit on a Government frequency when authorized to do so by the Government station or agency if the emission, bandwidth and frequency tolerance of the non-Government station are within the same limits as the Government station.

§ 80.355 Distress, urgency, safety, call and reply Morse code frequencies.

This section describes the distress, urgency, safety, call and reply carrier frequencies assignable to stations for Morse code radiotelegraphy.

(a) *Frequencies in the 100-160 kHz band.* The international calling frequency in the 100-160 kHz band is 143 kHz using A1A or J2A emission. When a ship station operating in the 100-160 kHz band desires to communicate with a coast station, it must call on the frequency 143 kHz unless the International List of Coast Stations provides otherwise. Coast stations must reply on their normal working frequency in this band. Only individual calls, replies to such calls, and transmission of signals preparatory to traffic may be transmitted on 143 kHz.

(b) *Frequencies in the 405-535 kHz band.* (1) The international distress, urgency, safety, call and reply frequency used by ship and coast stations operating in the 405-525 kHz band is 500 kHz. A2A and A2B or H2A and H2B emissions are preferred for distress calls, distress traffic and for urgency and safety messages. For call and reply messages A1A or J2A emission must be used. In order to facilitate distress communications routine correspondence tranmissions on 500 kHz must be reduced to a minimum.

(2) In Region 2 and areas of heavy traffic ship stations must request coast stations to listen on the ship station's working frequencies.

(3) In areas where 500 kHz is used for distress a ship or coast station must use the supplementary calling frequency 512 kHz for routine calling and normally request a reply on its working frequency. The called station may reply on 512 kHz when requested to do so by the calling station.

(c) *Frequencies in the 2000-27500 kHz band*—(1) *Survival craft frequencies:* Survival craft operating on 8364 kHz must use A2A or H2A emission to establish communications related to search and rescue operations.

(2) *Ship station frequencies.* The following tables describe the calling and safety carrier frequencies and frequency families in the 4000-27500 kHz band which may be used by ship stations for A1A or J2A radiotelegraphy. All of these frequencies are available to all authorized ship stations. In addition ship stations may operate 100 and 200 Hz above and below each of the frequencies listed in these tables. The calling frequencies are arranged by frequency family numbers. The frequency families which must be routinely guarded by U.S. coast radiotelegraph stations are marked by footnotes. The specific frequencies of the frequency family which must be guarded at a coast station will vary with propagation conditions. The calling frequencies which are routinely guarded by specific coast stations can be determined by reference to the ITU publication entitled "List of Coast Stations". The world-wide plan for the distribution and use of calling frequencies appears in Appendix 34 and Resolution No. 312 to the current edition of the ITU Radio Regulations. Initial calls by ship stations must be made on the appropriate frequencies of frequency family 3, 9, 13 or 17. Calls on frequency family 5 or 6 must be made only after calls on the appropriate frequency family 3, 9, 13 or 17 are unsuccessful.

(i) *General Frequency Table.*

TU channel series	Band ¹				
	4 MHz	6 MHz	8 MHz	12 MHz	16 MHz
	4180.2	6270.3	8360.4	12540.6	16720.8
	4180.6	6270.9	8361.2	12541.8	16722.4
	4181.0	6271.5	8362.0	12543.0	16724.0
	4181.4	6272.1	8362.8	12544.2	16725.6
	4181.8	6272.7	8363.6	12545.4	16727.2
	4182.2	6273.3	8364.4	12546.6	16728.8
	4182.6	6273.9	8365.2	12547.8	16730.4
	4183.0	6274.5	8366.0	12549.0	16732.0
	4183.4	6275.1	8366.8	12550.2	16733.6
	4183.8	6275.7	8367.6	12551.4	16735.2
	4184.2	6276.3	8368.4	12552.6	16736.8
	4184.6	6276.9	8369.2	12553.8	16738.4
	4185.0	6277.5	8370.0	12555.0	16740.0
	4185.4	6278.1	8370.8	12556.2	16741.6
	4185.8	6278.7	8371.6	12557.4	16743.2
	4186.2	6279.3	8372.4	12558.6	16744.8
	4186.6	6279.9	8373.2	12559.8	16746.4
	4187.0	6280.5	8374.0	12561.0	16748.0

All frequencies in kHz.

ITU channel series	Band ¹
	22 MHz
	22228.0
	22230.0
	22232.0
	22234.0
	22236.0
	22238.0
	22240.0
	22242.0
	22244.0
	22246.0

frequencies in kHz.

ITU channel designation	Band ¹
	25 MHz
	25071.0
	25073.0
	25075.0

frequencies in kHz.

World-Wide Families.

Family 5		Family 6	
ency)¹	ITU series/ designator	Frequency (kHz) ¹	ITU series/ designator
	5	4182.2	6
	5	6273.3	6
	5	8364.4	6
	5	12546.6	6
	5	16728.8	6
	3	22234.0	4
	C	25073.0	C

East Coast Families.

Family 1		Family 2	
Frequency (kHz)	ITU series/ designator	Frequency (kHz)	ITU series/ designator
4180.2	1	4180.6	2
6270.3	1	6270.9	2
8360.4	1	8361.2	2
12540.6	1	12541.8	2
16720.8	1	16722.4	2
22228.0	1	22228.0	1
22230.0	2	22230.0	2
25071.0	A	25071.0	A

Family 3		Family 4	
Frequency (kHz) ²	ITU series/ designator	Frequency (kHz) ²	ITU series/ designator
4181.0	3	4181.4	4
6271.5	3	6272.1	4
8362.0	3	8362.8	4
12543.0	3	12544.2	4
16724.0	3	16725.6	4
22228.0	1	22228.0	1
		22230.0	2
25071.0	A	25071.0	A

(iv) *Gulf Coast, Puerto Rico, and Virgin Island Families.*

Family 7		Family 8	
Frequency (kHz)	ITU series/ designator	Frequency (kHz)	ITU series/ designator
4182.6	7	4183.0	8
6273.9	7	6274.5	8
8365.2	7	8366.0	8
12547.8	7	12549.0	8
16730.4	7	16732.0	8
22236.0	5	22236.0	5
22238.0	6	22238.0	6
25071.0	A	25071.0	A

Family 9		Family 10	
Frequency (kHz) ²	ITU series/ designator	Frequency (kHz)	ITU series/ designator
4183.4	9	4183.8	10
6275.1	9	6275.7	10
8366.8	9	8367.6	10
12550.2	9	12551.4	10
16733.6	9	16735.2	10
22236.0	5	22236.0	5
		22238.0	6
25071.0	A	25071.0	A

(v) *West Coast, Guam, and Hawaii Families.*

Family 11		Family 12	
Frequency (kHz) [4]	ITU series/ designator	Frequency (kHz)	ITU series/ designator
4184.2	11	4184.6	12
6276.3	11	6276.9	12
8368.4	11	8369.2	12
12552.6	11	12553.8	12
16736.8	11	16738.4	12
		22240.0	7
22242.0	8	22242.0	8
25075.0	B	25075.0	B

Family 13		Family 14	
Frequency (kHz) [5]	ITU series/ designator	Frequency (kHz)	ITU series/ designator
4185.0	13	4185.4	14
6277.5	13	6278.1	14
8370.0	13	8370.8	14
12555.0	13	12556.2	14
16740.0	13	16741.6	14
22240.0	7	22240.0	7
		22242.0	8
25075.0	B	25075.0	B

(vi) *American Samoa Families.*

Family 15		Family 16	
Frequency (kHz)	ITU series/ designator	Frequency (kHz)	ITU series/ designator
4185.8	15	4186.2	16
6278.7	15	6279.3	16
8371.6	15	8372.4	16
12557.4	15	12558.6	16
16743.2	15	16744.8	16
22244.0	9	22244.0	9
22246.0	10	22246.0	10
25075.0	B	25075.0	B

Family 17		Family 18	
Frequency (kHz)	ITU series/ designator	Frequency (kHz)	ITU series/ designator
4186.6	17	4187.0	18
6279.9[6]	17	6280.5	18
8373.2[6]	17	8374.0	18
12559.8	17	12561.0	18
16746.4	17	16748.0	18
22244.0	9	22244.0	9
		22246.0	10
25075.0	B	25075.0	B

[1] Routinely guarded world-wide by all coast radiotelegraph stations.

[2] Routinely guarded by East Coast radiotelegraph stations.

[3] Routinely guarded by Gulf Coast radiotelegraph stations.

[4] Routinely guarded by West Coast and Pacific radiotelegraph stations.

[5] Routinely guarded by all West Coast radiotelegraph stations.

[6] Routinely guarded by American Samoa radiotelegraph stations.

(3) *Coast Station frequencies.* Coast stations may use any working carrier frequency for distress, safety and calling listed in § 80.357(b)(1) which is not identified with a specific use.

(d) *Frequencies in the VHF bands.* (1) Survival craft stations using 121.500 MHz may be assigned A3N emission for radiobeacon purposes.

(2) EPIRB stations may be assigned 121.500 MHz and 243.000 MHz using A3N emission or 156.750 MHz and 156.800 MHz using G3N emission to aid search and rescue operations. See subpart V of this part.

[51 FR 31213, Sept. 2, 1986; 51 FR 34984, Oct. 1, 1986; 52 FR 35245, Sept. 18, 1987]

§ 80.357 Morse code working frequencies.

This section describes the working frequencies assignable to maritime stations for A1A or J2A radiotelegraphy.

(a) *Ship station frequencies*—(1) *Frequencies in the 100-160 kHz band.* The following table describes the working carrier frequencies in the 100-160 kHz band which are assignable to ship stations. A ship station may also transmit on a radiotelegraphy working channel of a coast station within the 100-160 kHz band when directed to do so by the coast station provided interference is not caused to any land, fixed, broadcast, or radiolocation station.

100-160 (kHz)
152
153
154
155
156
157
158

(2) *Frequencies in the 405-525 kHz band.* The following table describes the working carrier frequencies in the 405-525 kHz band which are assignable to ship stations. A ship station may transmit on a radiotelegraphy working channel of a coast station in the 415-490 kHz band when directed to do so by the coast station.

405-525 (kHz)
[1] 410
425
454
468
480
[2] 512
[3] 518

The frequency 410 kHz may be used on a secondary
s for the transmission of radiodetermination information
for transmitting by radiotelegraph radiodetermination re-
d messages to direction-finding stations.
The frequency 512 kHz may be used as a supplementary
ng frequency when 500 kHz is used for distress, safety
urgency communications. The use of the 512 kHz as a
king frequency is prohibited in areas where it is used as a
plementary calling frequency when 500 kHz is used for
ress, safety, and urgency communications.
The frequency 518 kHz is a receive only frequency by
stations. It is used by U.S. Coast Guard coast stations for NB-DP transmissions of meteorological and navigational warnings to ships.

(3) *Frequencies in the 2000-27500 kHz band.* The following table describes the working frequencies and Channel Series in the 2000-27500 kHz band which are assignable to ship stations. Two Channel Series will be assigned for routine use to each ship station. Frequencies from any other Channel Series may be used if the frequencies in the assigned Channel Series are not adequate for communications.

Channel Series	Bands [1]						
	4 MHz	6 MHz	8 MHz	12 MHz	16 MHz	22 MHz	25 MHz
(a)	4188.5	6282.75	8377.0	12565.0	16754.0	22250.5	25091.5
(b)				12566.0	16754.5	22251.0	
(c)			8377.5		16755.0		
				12566.5	16755.5		
(a)	4189.0	6283.5	8378.0	12567.0	16756.0	22251.5	25092.0
(b)				12567.5	16756.5	22252.0	
(c)			8378.5		16757.0		
				12568.0	16757.5		
(a)	4189.5	6284.25	8379.0	12568.5	16758.0	22252.5	25092.5
b)				12569.0	16758.5	22253.0	
c)			8379.5		16759.0		
				12569.5	16759.5		
a)	4190.0	6285.0	8380.0	12570.0	16760.0	22253.5	25093.0
(b)				12570.5	16760.5	22254.0	
c)			8380.5		16761.0		
				12571.0	16761.5		
a)	4190.5	6285.75	8381.0	12571.5	16762.0	22254.5	25093.5
b)				12572.0	16762.5	22255.0	
c)			8381.5		16763.0		
				12572.5	16763.5		
a)	4191.0	6286.5	8382.0	12573.0	16764.0	22255.5	25094.0
b)				12573.5	16764.5	22256.0	
c)			8382.5		16765.0		
				12574.0	16765.5		
)	4191.5	6287.25	8383.0	12574.5	16766.0	22256.5	25094.5
)				12575.0	16766.5	22257.0	
)			8383.5		16767.0		
				12575.5	16787.5		
)	4192.0	6288.0	8384.0	12576.0	16768.0	22257.5	25095.0
)				12576.5	16768.5	22258.0	
)			8384.5		16769.0		
				12577.0	16769.5		
)	4192.5	6288.75	8385.0	12577.5	16770.0	22258.5	25095.5
)				12578.0	16770.5	22259.0	
)			8385.5		16771.0		
				12578.5	16771.5		
)	4193.0	6289.5	8386.0	12579.0	16772.0	22259.5	25096.0
)				12579.5	16772.5	22260.0	
)			8386.5		16773.0		
				12580.0	16773.5		
)	4193.5	6290.25	8387.0	12580.5	16774.0	22260.5	25096.5
)				12581.0	16774.5	22261.0	
)			8387.5		16775.0		
				12581.5	16775.5		
)	4194.0	6291.0	8388.0	12582.0	16776.0	22261.5	25097.0
)				12582.5	16776.5	22262.0	
			8388.5		16777.0		

Channel Series	Bands [1]						
	4 MHz	6 MHz	8 MHz	12 MHz	16 MHz	22 MHz	25 M
(c)				12583.0	16777.5		
W13	4194.5	6291.75	8389.0	12583.5	16778.0	22262.5	2509
(a)				12584.0	16778.5	22263.0	
(b)			8389.5		16779.0		
(c)				12584.5	16779.5		
W14	4195.0	6292.5	8390.0	12585.0	16780.0	22263.5	2509
(a)				12585.5	16780.5	22264.0	
(b)			8390.5		16781.0		
(c)				12586.0	16781.5		
W15	4195.5	6293.25	8391.0	12586.5	16782.0	22264.5	2509
(a)				12587.0	16782.5	22265.0	
(b)			8391.5		16783.0		
(c)				12587.5	16783.5		
W16	4196.0	6294.0	8392.0	12588.0	16784.0	22265.5	2509
(a)				12588.5	16784.5	22266.0	
(b)			8392.5		16785.0		
(c)				12589.0	16785.5		
W17	4196.5	6294.75	8393.0	12589.5	16786.0	22266.5	2509
(a)				12590.0	16786.5	22267.0	
(b)			8393.5		16787.0		
(c)				12590.5	16787.5		
W18	4197.0	6295.5	8394.0	12591.0	16788.0	22267.5	2510
(a)				12591.5	16788.5	22268.0	
(b)			8394.5		16789.0		
(c)				12592.0	16789.5		
W19	4197.5	6296.25	8395.0	12592.5	16790.0	22268.5	2510
(a)				12593.0	16790.5	22269.0	
(b)			8395.5		16791.0		
(c)				12593.5	16791.5		
W20	4198.0	6297.0	8396.0	12594.0	16792.0	22269.5	2510
(a)				12594.5	16782.5	22270.0	
(b)			8396.5		16793.0		
(c)				12595.0	16793.5		
W21	4198.5	6297.75	8397.0	12595.5	16794.0	22270.5	25101
(a)				12596.0	16794.5	22271.0	
(b)			8397.5		16795.0		
(c)				12596.5	16796.5		
W22	4199.0	6298.5	8398.0	12597.0	16696.0	22271.5	2510
(a)				12597.5	16796.5	22272.0	
(b)			8398.5		16797.0		
(c)				12598.0	16797.5		
W23	4199.5	6299.25	8399.0	12598.5	16798.0	22272.5	2510
(a)				12599.0	16798.5	22273.0	
(b)			8399.5		16799.0		
(c)				12599.5	16799.5		
W24	4200.0	6300.0	8400.0	12600.0	16800.0	22273.5	2510
(a)				12600.5	16800.5	22274.0	
(b)			8400.5		16801.0		
(c)				12601.0	16801.5		
W25	4200.5	6300.75	8401.0	12601.5	16802.0	22274.5	2510
(a)				12602.0	16802.5	22275.0	
(b)			8401.5		16803.0		
(c)				12602.5	16803.5		
W26	4201.0	6301.5	8402.0	12603.0	16804.0	22275.5	25104
(a)				12603.5	16804.5	22276.0	
(b)			8402.5		16805.0		
(c)				12604.0	16805.5		
W27	4201.5	6302.25	8403.0	12604.5	16806.0	22276.5	25104
(a)				12605.0	16806.5	22277.0	
(b)			8403.5		16807.0		
(c)				12605.5	16807.5		
W28	4202.0	6303.0	8404.0	12606.0	16808.0	22277.5	2510
(a)				12606.0	16808.5	22278.0	
(b)			8404.5		16809.0		
(c)				12607.0	16809.5		
W29	4202.5	6303.75	8405.0	12607.5	16810.0	22278.5	2510
(a)				12608.0	16810.5	22279.0	
(b)			8405.5		16811.0		
(c)				12608.5	16811.5		
W30	4203.0	6304.5	8406.0	12609.0	16812.0	22279.5	2510
(a)				12609.5	16812.5	22280.0	

Channel Series	Bands [1]						
	4 MHz	6 MHz	8 MHz	12 MHz	16 MHz	22 MHz	25 MHz
(b)			8406.5		16813.0		
(c)				12610.0	16813.5		
W31	4203.5	6306.25	8407.0	12610.5	16814.0	22280.5	25106.5
(a)				12611.0	16814.5	22281.0	
(b)			8407.5		16815.0		
(c)				12611.5	16815.5		
W32	4204.0	6306.0	8408.0	12612.0	16816.0	22281.0	25107.0
(a)				12612.5	16816.5	22282.0	
(b)			8408.5		16817.0		
(c)				12613.0	16817.5		
W33	4204.5	6306.75	8409.0	12613.5	16818.0	22282.5	25107.5
(a)				12614.0	16818.5	22283.0	
(b)			8409.5		16819.0		
(c)				12614.5	16819.5		
W34	4205.0	6307.5	8410.0	12615.0	16820.0	22283.5	25109.0
(a)				12615.5	16820.5	22284.0	
(b)			8410.5		16821.0		
(c)				12616.0	16821.5		
W35	4205.5	6308.25	8411.0	12616.5	16822.0	22284.5	25108.5
(a)				12617.0	16822.5	22285.0	
(b)			8411.5		16823.0		
(c)				12617.5	16823.5		
36	4206.0	6309.0	8412.0	12618.0	16824.0	22285.5	25091.5
(a)				12618.5	16824.5	22286.0	
(b)			8412.5		16825.0		
(c)				12619.0	16825.0		
37	4206.5	6309.75	8413.0	12619.5	16826.0	22286.5	25092.0
(a)				12620.0	16826.5	22297.0	
(b)			8413.5		16827.0		
(c)				12620.5	16827.5		
38	4207.0	6310.5	8414.0	12621.0	16828.0	22297.5	25092.5
(a)				12621.5	16828.5		
(b)			8414.5		16829.0	22298.0	
(c)				12622.0	16829.5		
39	4207.5	6311.25	8415.0	12622.5	16830.0	22298.5	25093.0
(a)				12623.0	16830.5	22299.0	
(b)			8415.5		16831.0		
(c)				12623.5	16831.5		
40	4208.0	6312.0	8416.0	12624.0	16832.0	22299.5	25093.5
(a)				12624.5	16832.5	22300.0	
(b)			8416.5		16833.0		
(c)				12625.0	16833.5		
41	4208.5	6312.75	8417.0	12625.5	16834.0	22300.5	25094.0
(a)				12626.0	16834.5	22301.0	
(b)			8417.5		16835.0		
(c)				12626.5	16835.5		
42	4209.0	6313.5	8418.0	12627.0	16836.0	22301.5	25094.5
(a)				12627.5	16836.5	22302.0	
(b)			8418.5		16837.0		
(c)				12628.0	16837.5		
43	4209.5	6314.25	8419.0	12628.5	16838.0	22302.5	25095.0
(a)				12629.0	16838.5	22303.0	
(b)			8419.5		16839.0		
(c)				12629.5	16839.5		
44	4210.0	6315.0	8420.0	12630.0	16840.0	22303.5	25095.5
(a)				126230.5	16840.5	22304.0	
(b)			8420.5		16841.0		
(c)				12631.0	16841.5		
5	4210.5	6315.75	8421.0	12631.5	16842.0	22304.5	25096.0
(a)				12632.0	16842.5	22305.0	
(b)			8421.5		16843.0		
(c)				12632.5	16843.5		
6	4211.0	6316.5	8422.0	12633.0	16844.0	22305.5	25096.5
(a)				12633.5	16844.5	22306.0	
(b)			8422.5		16845.0		
(c)				12634.0	16845.5		
7	4211.5	6317.25	8423.0	12634.5	16846.0	2230C.5	25097.0
(a)				12635.0	16846.5	22307.0	
(b)			8423.5		16847.0		
(c)				12635.5	16847.5		
8	4212.0	6318.0	8424.0	12636.0	16848.0	22307.5	25097.5

Channel Series	Bands [1]						
	4 MHz	6 MHz	8 MHz	12 MHz	16 MHz	22 MHz	25 MHz
(a)				12636.5	16848.5	22308.0	
(b)			8424.5		16849.0		
(c)				12637.0	16849.5		
W49	4212.5	6318.75	8425.0	12637.5	16850.0	22308.5	25098.0
(a)				12638.0	16850.5	22309.0	
(b)			8425.5		16851.0		
(c)				12638.5	16851.5		
W50	4213.0	6319.5	8426.0	12639.0	16852.0	22250.5	25098.5
(a)				12639.5	16852.5	22251.0	
(b)			8426.5		16853.0		
(c)				12640.0	16853.5		
W51	4213.5	6320.25	8427.0	12640.5	16854.0	22251.5	25099.0
(a)				12641.0	16854.5	22252.0	
(b)			8427.5		16855.0		
(c)				12641.5	16855.5		
W52	4214.0	6321.0	8428.0	12642.0	16856.0	22252.5	25099.5
(a)				12642.5	16856.5	22253.0	
(b)			8428.5		16857.0		
(c)				12643.0	16857.5		
W53	4214.5	6321.75	8429.0	12643.5	16858.0	22253.5	25100.0
(a)				12644.0		22254.0	
(b)			8429.5				
(c)				12644.5	16719.0		
W54	4215.0	6322.5	8430.0	12645.0	16707.0	22254.5	25100.5
(a)				12645.5	16707.5	22255.0	
(b)			8430.5	12530.0	16708.0		
(c)				12646.0	16708.5		
W55	4215.5	5323.25	8431.0	12646.5	16709.0	22255.5	25101.0
(a)				12647.0	16709.5	22256.0	
(b)			8431.5	12530.5	16710.0		
(c)				12647.5	16710.5		
W56	4216.0	6324.0	8432.0	12648.0	16711.0	22256.5	25101.5
(a)				12648.5	16711.5	22257.0	
(b)			8432.5	12531.0	16712.0		
(c)				12649.0	16712.5		
W57	4216.5	6324.75	8433.0	12649.5	16713.0	22257.5	25102.0
(a)				12650.0	16713.5	22258.0	
(b)			8433.5	12531.5	16714.0		
(c)				12650.5	16714.5		
W58	4217.0		8434.0	12651.0	16715.0	22258.5	25102.5
(a)				12532.0	16715.5	22259.0	
(b)			8434.5	12532.5	16715.5		
(c)					16716.5		
W59	4217.5		8435.0	12528.0	16717.0	22259.5	25103.0
W60	4218.0		8358.5	12528.5	16717.5	22260.0	25103.5
W61	4218.5		8359.0	12529.0	16718.0	22260.5	25104.0
W62	4219.0		8359.5	12529.5	16718.5	22261.0	25104.5

[1] All frequencies in this table are shown in kilohertz.

(b) *Coast station frequencies*—(1) *Frequencies in the 100-27500 kHz band.* The following table describes the working carrier frequencies in the 100-27500 kHz band which are assignable to coast stations located in the designated geographical areas.

Area	Bands [1]								
	100-160 kHz	405-525 kHz	2 MHz	4 MHz	6 MHz	8 MHz	12 MHz	16 MHz	22 MHz
Central Pacific	126.15	426.00	2037.5	4247.0	6348.0	8558.0	12695.5	17016.8	22425.0
		436.00	2045.0	4274.0	6365.5	8618.0	12808.5	17026.0	22479.0
	147.85	460.00	2061.5	4228.0	6477.5	8642.0	12844.5	17088.8	22515.0
		476.0			6488.0	8445.0	13002.0	16847.3	22557.0
		500.00					13033.5		
		512.00							
South Pacific		418.00	2049.5	4238.0	6355.0	8590.0	12691.0	17064.8	22413.0

Area	Bands[1]								
	100–160 kHz	405–525 kHz	2 MHz	4 MHz	6 MHz	8 MHz	12 MHz	16 MHz	22 MHz
	....	464.00	2055.5	4283.0	6463.5	8606.0	12912.0	17088.8	22467.0
	....	482.00	....	....	....	8642.0	12993.0	16880.9	....
	....	500.00	....	....	....	....	13033.5	....	....
	....	512.00	....	....	....	....	....	....	....
Gulf of Mexico	153.00	410.00	2042.0	4256.0	6369.0	8473.0	12704.5	16018.8	22431.0
	....	420.00	2048.0	4274.0	6435.5	8550.0	12826.5	17117.6	22467.0
	....	434.00	2049.5	4310.0	6446.0	8570.0	12840.0	17170.4	22318.5
	....	438.00	2052.5	4322.0	6495.0	8666.0	13038.0	17172.4	....
	....	478.00	2055.5	....	....	8445.0	13051.5	16871.3	....
	....	484.00	2063.0	....	....	8453.0	12660.0	....	....
	....	500.00	....	....	....	....	....	....	....
	....	512.00	....	....	....	....	....	....	....
Great Lakes	....	482.00	....	4316.0	6474.0	8534.0	....	....	....
	....	500.00	....	....	....	....	....	....	....
	....	512.00	....	....	....	....	....	....	....
Hawaii	....	484.00	2052.5	4295.0	6407.5	8542.0	13029.0	16978.4	22509.0
	....	500.00	....	....	....	....	....	....	....
	....	512.00	....	....	....	....	....	....	....
Puerto Rico	153.00	486.00	2052.5	4244.0	....	8457.0	12700.0	....	....
	....	500.00	....	....	....	....	....	....	....
	....	512.00	....	....	....	....	....	....	....
North Atlantic	112.85	418.00	2036.0	4238.0	6351.5	8502.0	12745.5	16933.2	22407.0
	124.05	436.00	2040.5	4268.0	6376.0	8514.0	12925.5	16968.8	22485.0
	130.35	442.00	2046.5	4331.0	6414.5	8586.0	12948.0	16973.6	22503.0
	132.10	460.00	2051.0	4343.0	6418.0	8610.0	12961.5	16997.6	22521.0
	134.55	472.00	2054.0	4346.0	6333.5	8630.0	12997.5	17021.6	22348.5
	137.00	476.00	2060.0	....	6337.0	8658.0	13020.0	17093.6	22366.5
	....	482.00	....	....	6344.0	8686.0	13024.5	16904.9	....
	146.80	500.00	....	....	....	....	13033.5	....	....
	147.50	512.00	....	....	....	....	13060.5	....	....
Central Atlantic	....	428.00	2063.0	4346.0	6484.5	8502.0	12885.0	....	....
	....	500.00	....	....	....	....	....	....	....
	....	512.00	....	....	....	....	....	....	....
South Atlantic	137.70	434.00	2039.0	4250.0	6389.6	8486.0	12952.5	16918.8	22431.0
	....	464.00	2043.5	4292.0	6407.5	8525.0	12970.5	17093.6	22503.0
	....	472.00	2051.0	4295.0	6411.0	8686.0	13011.0	17160.8	22318.5
	....	488.00	2057.0	....	....	8453.0	12660.0	17170.4	....
	....	500.00	....	....	....	....	....	16861.7	....
	....	512.00	....	....	....	....	....	....	....
North Pacific	....	482.00	2058.5	4349.0	6411.0	8582.0	12907.5	17007.2	22539.0
	....	488.00	2063.0	....	....	8658.0	12916.5	....	....
	....	500.00	....	....	....	....	....	....	....
	....	512.00	....	....	....	....	....	....	....
Alaska	....	416.00	....	....	....	....	....	....	....
	....	438.00	....	....	....	....	....	....	....
	....	452.00	....	....	....	....	....	....	....
	....	472.00	....	....	....	....	....	....	....
	....	512.00	....	....	....	....	....	....	....

[1] All frequencies in this table are shown in kilohertz.

(2) *Conditions of use.* The following conditions are applicable to these frequencies:

(i) Frequencies in the 100-160 kHz band are assignable to coast stations for high seas communications only;

(ii) Frequencies above 5 MHz may be assigned primarily to stations serving the high seas and secondarily to stations serving inland waters of the United States including the Great Lakes, subject to showing of need and with the condition that interference will not be caused to any high seas coast station;

(iii) The frequency 410 kHz may be used on a secondary basis for the transmission of radiodetermination information and for transmitting by radiotelegraph radiodetermination messages to direction-finding stations; and

(iv) The frequency 512 kHz may be used as a supplementary calling frequency when 500 kHz is used for distress, urgency and safety communications. The use of the 512 kHz as a working frequency is prohibited in

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areas where 500 kHz is used for distress, urgency and safety communications.

[51 FR 31213, Sept. 2, 1986; 51 FR 34984, Oct. 1, 1986]

§ 80.359 Frequencies for digital selective calling (DSC).

(a) *General purpose calling.* The following tables describe the DSC frequencies that are assignable to ship and coast stations for general purpose calling.

SHIP TRANSMIT

[In kHz unless otherwise noted]

458.5	8375.5	16751.0
2177.0 [1]	12562.0	22248.0
2189.5	12562.5	22248.5
4187.5	16750.5	156.525 MHz
6281.5		

[1] The frequency 2177.0 kHz is available to ship stations for internship calling and acknowledgement of such calls only.

COAST TRANSMIT

[In kHz unless otherwise noted]

455.5	8718.5	17232.5
2177.0	13100.0	22595.0
4357.0	13100.5	22595.5
6507.0	17232.0	156.525 MHz

(b) *Distress and safety calling.* The following table describes the non-paired frequencies assignable to ship and coast stations for DSC distress and safety calling. The provisions and procedures for distress and safety calling are contained in CCIR Recommendation 541 as modified by § 80.103(c) of this part.

Non-paired channels.

Transmit and receive (kHz)
2187.5 kHz
4188.0 kHz
6282.0 kHz
8375.0 kHz
12563.0 kHz
16750.0 kHz
156.525 MHz

(c) *Working frequencies.* Coast and ship stations may use DSC techniques for general calling purposes on their assigned working frequencies in the 2000-27500 kHz band and on those frequencies in the 156-162 MHz band which are allocated for maritime control, commercial, non-commercial and public correspondence communications.

[51 FR 31213, Sept. 2, 1986, as amended at 54 FR 49995, Dec. 4, 1989]

§ 80.361 Frequencies for narrow-band direct-printing (NB-DP) and data transmissions.

(a) The following table describes the frequency pairs and Channel Series which are assignable to ship and public coast stations for narrow-band direct printng (NB-DP) and data transmissions:

Paired channels.

Channel series	Band[1]											
	4 MHz		6 MHz		8 MHz		12 MHz		16 MHz		22 MHz	
	Coast transmit	Ship transmit	Coast transmit	Ship transmit	Coast transmit	Ship transmit	Coast transmit	Ship transmit	Coast transmit	Ship transmit	Coast transmit	Ship transmit
R1	4350.0	4170.5	6494.5	6256.5	8705.0	8344.0	13071.5	12491.5	17197.5	16660.5	22561.5	22192.5
R2	4350.5	4171.0	6495.0	6257.0	8705.5	8344.5	13072.0	12492.0	17198.0	16661.0	22562.0	22193.0
R3	4351.0	4171.5	6495.5	6257.5	8706.0	8345.0	13072.5	12492.5	17198.5	16661.5	22562.5	22193.5
R4	4351.5	4172.0	6496.0	6258.0	8706.5	8345.5	13073.0	12493.0	17199.0	16662.0	22563.0	22194.0
R5	4352.0	4172.5	6496.5	6258.5	8707.0	8346.0	13073.5	12493.5	17199.5	16662.5	22563.5	22194.5
R6	4352.5	4173.0	6497.0	6259.0	8707.5	8346.5	13074.0	12494.0	17200.0	16663.0	22564.0	22195.0
R7	4353.0	4173.5	6497.5	6259.5	8708.0	8347.0	13074.5	12494.5	17200.5	16663.5	22564.5	22195.5
R8	4353.5	4174.0	6498.0	6260.0	8708.5	8347.5	13075.0	12495.0	17201.0	16664.0	22565.0	22196.0
R9	4354.0	4174.5	6498.5	6260.5	8709.0	8348.0	13075.5	12495.5	17201.5	16664.5	22565.5	22196.5
R10	4354.5	4175.0	6499.0	6261.0	8709.5	8348.5	13076.0	12496.0	17202.0	16665.0	22566.0	22197.0
R11	4355.0	4175.5	6499.5	6261.5	8710.0	8349.0	13076.5	12496.5	17202.5	16665.5	22566.5	22197.5
R12	4355.5	4176.0	6500.0	6262.0	8710.5	8349.5	13077.0	12497.0	17203.0	16666.0	22567.0	22198.0
R13	4356.0	4176.5	6500.5	6262.5	8711.0	8350.0	13077.5	12497.5	17203.5	16666.5	22567.5	22198.5
R14	4356.5	4177.0	6501.0	6263.0	8711.5	8350.5	13078.0	12498.0	17204.0	16667.0	22568.0	22199.0
R15			6501.5	6263.5	8712.0	8351.0	13078.5	12498.5	17204.5	16667.5	22568.5	22199.5
R16			6502.0	6264.0	8712.5	8351.5	13079.0	12499.0	17205.0	16668.0	22569.0	22200.0
R17			6502.5	6264.5	8713.0	8352.0	13079.5	12499.5	17205.5	16668.5	22569.5	22200.5
R18			6503.0	6265.0	8713.5	8352.5	13080.0	12500.0	17206.0	16669.0	22570.0	22201.0
R19			6503.5	6265.5	8714.0	8353.0	13080.5	12500.5	17206.5	16669.5	22570.5	22201.5
R20			6504.0	6266.0	8714.5	8353.5	13081.0	12501.0	17207.0	16670.0	22571.0	22202.0
R21			6504.5	6266.5	8715.0	8354.0	13081.5	12501.5	17207.5	16670.5	22571.5	22202.5
R22			6505.0	6267.0	8715.5	8354.5	13082.0	12502.0	17208.0	16671.0	22572.0	22203.0
R23			6505.5	6267.5	8716.0	8355.0	13082.5	12502.5	17208.5	16671.5	22572.5	22203.5
R24					8716.5	8355.5	13083.0	12503.0	17209.0	16672.0	22573.0	22204.0
R25					8717.0	8356.0	13083.5	12503.5	17209.5	16672.5	22573.5	22204.5
R26					8717.5	8356.5	13084.0	12504.0	17210.0	16673.0	22574.0	22205.0
R27					8718.0	8357.0	13084.5	12504.5	17210.5	16673.5	22574.5	22205.5
R28							13085.0	12505.0	17211.0	16674.0	22575.0	22206.0
R29							13085.5	12505.5	17211.5	16674.5	22575.5	22206.5
R30							13086.0	12506.0	17212.0	16675.0	22576.0	22207.0
R31							13086.5	12506.5	17212.5	16675.5	22576.5	22207.5
R32							13087.0	12507.0	17213.0	16676.0	22577.0	22208.0
R33							13087.5	12507.5	17213.5	16676.5	22577.5	22208.5
R34							13088.0	12508.0	17214.0	16677.0	22578.0	22209.0
R35							13088.5	12508.5	17214.5	16677.5	22578.5	22209.5
R36							13089.0	12509.0	17215.0	16678.0	22579.0	22210.0
R37							13089.5	12509.5	17215.5	16678.5	22579.5	22210.5
R38							13090.0	12510.0	17216.0	16679.0	22580.0	22211.0
R39							13090.5	12510.5	17216.5	16679.5	22580.5	22211.5
R40							13091.0	12511.0	17217.0	16680.0	22581.0	22212.0
R41							13091.5	12511.5	17217.5	16680.5	22581.5	22212.5

Channel series	Band[1]											
	4 MHz		6 MHz		8 MHz		12 MHz		16 MHz		22 MHz	
	Coast transmit	Ship transmit	Coast transmit	Ship transmit	Coast transmit	Ship transmit	Coast transmit	Ship transmit	Coast transmit	Ship transmit	Coast transmit	Ship transmit
R42							13092.0	12512.0	17218.0	16681.0	22582.0	22213.0
R43							13092.5	12512.5	17218.5	16681.5	22582.5	22213.5
R44							13093.0	12513.0	17219.0	16682.0	22583.0	22214.0
R45							13093.5	12513.5	17219.5	16682.5	22583.5	22214.5
R46							13094.0	12514.0	17220.0	16683.0	22584.0	22215.0
R47							13094.5	12514.5	17220.5	16683.5	22584.5	22215.5
R48							13095.0	12515.0	17221.0	16684.0	22585.0	22216.0
R49							13095.5	12515.5	17221.5	16684.5	22585.5	22216.5
R50							13096.0	12516.0	17222.0	16685.0	22586.0	22217.0
R51							13096.5	12516.5	17222.5	16685.5	22586.5	22217.5
R52							13097.0	12517.0	17223.0	16686.0	22587.0	22218.0
R53							13097.5	12517.5	17223.5	16686.5	22587.5	22218.5
R54							13098.0	12518.0	17224.0	16687.0	22588.0	22219.0
R55							13098.5	12518.5	17224.5	16687.5	22588.5	22219.5
R56							13099.0	12519.0	17225.0	16688.0	22589.0	22220.0
R57							13099.5	12519.5	17225.5	16688.5	22589.5	22220.5
R58									17226.0	16689.0	22590.0	22221.0
R59									17226.5	16689.5	22590.5	22221.5
R60									17227.0	16690.0	22591.0	22222.0
R61									17227.5	16690.5	22591.5	22222.5
R62									17228.0	16691.0	22592.0	22223.0
R63									17228.5	16691.5	22592.5	22223.5
R64									17229.0	16692.0	22593.0	22224.0
R65									17229.5	16692.5	22593.5	22224.5
R66									17230.0	16693.0	22594.0	22225.0
R67									17230.5	16693.5	22594.5	22225.5
R68									17231.0	16694.0		
R69									17231.5	16694.5		

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[1] All frequencies in this table are shown in kilohertz

(b) The following table describes the frequencies and Channel Series with F1B or J2B emission which are assignable to ship stations for NB-DP and data transmission communications with public coast stations. Public coast stations may receive only on these frequencies:

Non-paired channels.

Channel series	Band [1]						
	4 MHz	6 MHz	8 MHz	12 MHz	16 MHz	22 MHz	25 MHz
P1	[2] 4177.5	[2] 6268.0	8297.6	[2] 12520.0	[2] 16695.0	22226.0	25076.3
P2	4178.0	6268.5	8298.1	12520.5	16695.5	22226.5	25076.8
P3	4178.5	6269.0	8298.6	12521.0	16696.0		25077.3
P4	4179.0	6269.5	8299.1	12521.5	16696.5		25077.8
P5	4179.5		8299.6	12522.0	16697.0		25078.3
P6			[2] 8357.5	12522.5	16697.5		25078.8
P7				12523.0	16698.0		25079.3
P8				12523.5	16698.5		25079.8
P9				12524.0	16699.0		25080.3
P10				12524.5	16699.5		25080.8
P11				12525.0	16700.0		25081.3
P12				12525.5	16700.5		25081.8
P13				12526.0	16701.0		25082.3
P14				12526.5	16701.5		25082.8
P15				16702.0			25083.3
P16				16702.5			25083.8
P17				16703.0			25084.3
P18				16703.5			25084.8
P19				16704.0			25085.3
P20				16704.5			25085.8
P21				16705.0			25086.3
P22				16705.5			25086.8
P23							25087.3
P24							25087.8
P25							25088.3
P26							25088.8
P27							25089.3
P28							25089.8

[1] All frequencies in this table are shown in kilohertz.

[2] These frequencies and the frequency 2174.5 kHz are available only for distress and safety communications using NB-DP.

§ 80.363 Frequencies for facsimile.

The non-paired frequencies with F1C, F3C, J2C or J3C emission which are assignable to ship and public coast stations for facsimile are as follows:

(a) *Ship station frequencies.* The following table describes two Channel Series of frequencies which are assignable to ship stations for facsimile. Only one Channel Series will be assigned to a ship station.

Carrier frequency (kHz)	
Series No. 1	Series No. 2
2069.1	2071.1
2073.1	2075.1
4159.2	4166.6
6237.2	6241.2
8324.6	8340.1
12483.6	12487.6
16652.6	16656.6
22184.6	22188.6

(b) *Public coast station frequencies.* Frequencies in the 2000–27500 kHz bands listed in part 2 of the Commission's rules as available for shared use by the maritime mobile service and other radio services are assignable to public coast stations for facsimile.

[51 FR 31213, Sept. 2, 1986, as amended at 54 FR 40059, Sept. 29, 1989]

RADIOTELEPHONY

§ 80.365 Scope.

The following sections describe the carrier frequencies and general conditions of use for the following types of radiotelephony:

—Distress, urgency, safety, call and reply.
—Working.
—Public.
—Private.

§ 80.367 General uses—radiotelephony.

(a) Ship stations communicating with foreign coast stations may operate on any frequency designated by that coast station.

(b) Radiotelephony stations communicating with a Government station may transmit on a Government frequency when authorized to do so by the Government station or agency if the emission, bandwidth and frequency tolerance of the maritime station are within the same limits as the Government station.

(c) Frequencies assigned to Government radio stations are assignable to non-Government maritime stations for radiotelephony communications with other non-Government stations in connection with activities performed in coordination with or on behalf of the Government.

(d) Frequencies in the 2000-27500 kHz band will be authorized only to ship stations that in addition are authorized to use frequencies in the 156-162 MHz band.

(e) Frequencies in the 2000-2850 kHz band will be authorized to private coast stations that in addition are authorized to use frequencies in the 156-162 MHz band.

(f) Ship and coast stations authorized to use frequencies in both the 2000-27500 kHz and 156-162 MHz bands must not use frequencies in the 2000-27500 kHz band for communications with any other station which is within the VHF service range.

(g) Coast and ship station radiotelephone working frequencies are available for DSC general purpose calling under the provisions of Section § 80.207(a).

(h) Digital selective calling techniques are not authorized on the frequencies 2182 kHz or 156.800 MHz.

§ 80.369 Distress, urgency, safety, call and reply frequencies.

This section describes the general uses and frequencies assignable to maritime stations for distress, urgency, safety, call and reply radiotelephony communications.

(a) In the 1605-3500 kHz band, the frequency 2182 is an international radiotelephony distress, urgency and safety frequency for ship stations, public and private coast stations, and survival craft stations. It is also used for call and reply by ship stations on a primary basis and by public coast stations on a secondary basis. The carrier frequency 2191 kHz may be used as a supplementary calling frequency in areas of heavy usage of 2182 kHz. All stations must use J3E emission when operating on 2182 and 2191 kHz, except that:

(1) H3E emission may be used on 2182 kHz for communications with foreign coast and ship stations; or,

(2) A3E emission may be used on 2182 kHz by portable survival craft stations, or transmitters authorized for use prior to January 1, 1972. See § 80.203(c).

(b) The frequencies 4125.0 kHz, 6215.5 kHz, 8257.0 kHz, 12392.0 kHz and 16.522.0 kHz may be used by coast and ship stations on a simplex basis for distress and safety communications. The frequency 4125.0 kHz may also be used for distress and safety communications between aircraft and maritime mobile stations.

(c) The frequency 5167.5 kHz is available to any station for emergency communications in the State of Alaska. Peak envelope power of stations operating on this frequency must not exceed 150 watts. This frequency may also be used by Alaska private fixed stations for calling and listening but only for establishing communica tion

(d) In the 4000-27500 kHz band shi and public coast stations may use th following frequency pairs for call an reply communications:

Call and reply frequency pairs in the 4000-27500 kHz ban

Channel No.	Carrier frequency (kHz)	
	Ship transmit	Coast transmi
0821	8257.0	8780.9
1221	12392.0	13162.8
1621	16522.0	17294.9
2221	22062.0	22658.0

(e) In the 120-156 MHz band the f lowing frequencies are used as indic ed:

(1) The frequencies 121.500 MHz a 123.100 MHz using A3E emission available for scene of action sea

and rescue operations to ship, coast and aircraft stations. Communications in support of search and rescue operations must employ the frequency 121.500 MHz only when communications on 123.100 MHz or other VHF frequencies is not practicable. Ship, coast and aircraft stations engaged in such communications on 121.500 MHz must shift to 123.100 MHz as soon as possible.

(2) The frequency 156.525 MHz is available for intership, ship and coast general purpose, distress and safety DSC calls.

(3) The frequency 156.800 MHz is the international radiotelephone distress, urgency, safety, call and reply frequency for ship, public and private coast stations. Stations operating on 156.800 MHz must be able to transmit and receive using G3E emission.

[51 FR 31213, Sept. 2, 1986, as amended at 52 FR 35245, Sept. 18, 1987; 54 FR 49995, Dec. 4, 1989]

§ 80.371 Public correspondence frequencies.

This section describes the radiotelephony working frequencies assignable to ship and public coast stations.

(a) *Working frequencies in the 2000-4000 kHz band.* The following table describes the working carrier frequency pairs in the 2000-4000 kHz band.

Working frequency pairs in the 2000–4000 kHz band

Region	Carrier frequency (kHz)	
	Ship transmit	Coast transmit
East Coast:	2031.5	2490.0
	2118.0	[1] 2514.0
	2126.0	2522.0
	2142.0	2538.0
	2166.0	2558.0
	2198.0	2590.0
	2366.0	2450.0
	2382.0	2482.0
	2390.0	2566.0
	2400.0	2400.0
	2406.0	2442.0
	2406.0	2506.0
West Coat:	2003.0	2450.0
	2009.0	2442.0
	2009.0	2566.0
	2031.5	2566.0
	2126.0	2522.0
	2206.0	2598.0
	2382.0	2466.0
	2406.0	2506.0
	2430.0	2482.0
Gulf Coast:	2009.0	2466.0
	2134.0	2530.0
	2142.0	2538.0
	[1] 2158.0	[1] 2550.0
	2166.0	2558.0
	2206.0	2598.0
	2366.0	2450.0
	2382.0	2482.0
	2430.0	2572.0
	2458.0	2506.0
Great Lakes [2]:	2118.0	2514.0
	2158.0	2550.0
	2206.0	2582.0
Alaska:	2131.0	2309.0
	2134.0	2312.0
	2237.0	2397.0
	2240.0	2400.0
Hawaii	2134.0	2530.0
Caribbean:	2009.0	2506.0
	[3] 2086.0	2585.0
	2134.0	2530.0
Guam	2009.0	2506.0

[1] Unlimited hours of use from December 15 to April 1 and day only from April 1 to December 15. Harmful interference must not be caused to any ship station in the Great Lakes region.

[2] In the Great Lakes region 2206 kHz is not available for transmission to U.S. ships except in the case of distress. U.S. coast stations in the Great Lakes area may use 2514, 2550 and 2582 kHz on a shared basis with coast stations of Canada. Except in the case of distress, the frequency 2550 kHz must not be used for transmission to ship stations of Canada since the associated ship station transmit frequency 2158 kHz is not available to Canadian ship stations for transmission and 2582 kHz must not be used for public correspondence transmissions to U.S. ship stations since the associated ship transmit frequency 2206 kHz is not available to U.S. ship stations for transmissions except in the case of distress.

[3] Limited to a peak envelope power of 150 watts.

(b) *Working frequencies in the 4000-27500 kHz band.* The following table describes the working carrier frequency pairs in the 4000-27500 kHz band:

Working carrier frequency pairs in the 4000-27500 kHz band

Region	Channel designation	Carrier frequency (kHz)	
		Ship transmit	Coast transmit
East Coast:	403	4069.2	4363.6
	410	4090.9	4385.3
	411	4094.0	4388.4
	412	4097.1	4391.5
	416	4109.5	4403.9
	417	4112.6	4407.0
	422	4128.1	4422.5
	423	4131.2	4425.6
	802	8198.1	8722.0
	805	8207.4	8731.3
	808	8216.7	8740.6
	810	8222.9	8746.8
	811	8226.0	8749.9
	814	8235.3	8759.2
	815	8238.4	8762.3
	825	8269.4	8793.3

Working carrier frequency pairs in the 4000–27500 kHz band

Region	Channel designation	Carrier frequency (kHz)	
		Ship transmit	Coast transmit
	826	8272.5	8796.4
	831	8288.0	8811.9
	1203	12336.2	13107.0
	1206	12345.5	13116.3
	1208	12351.7	13122.5
	1209	12354.8	13125.6
	1210	12357.9	13128.7
	1211	12361.0	13131.8
	1215	12373.4	13144.2
	1222	12359.1	13165.9
	1223	12398.2	13169.0
	1228	12413.7	13184.5
	1230	12419.9	13190.7
	1601	16460.0	17232.9
	1605	16472.4	17245.3
	1609	16484.8	17257.7
	1610	16487.9	17260.8
	1611	16491.0	17263.9
	1616	16506.5	17279.4
	1620	16518.9	17291.8
	1626	16537.5	17310.4
	1631	16553.0	17325.9
	2201	22000.0	22596.0
	2205	22012.4	22608.4
	2210	22027.9	22623.9
	2215	22043.4	22639.4
	2216	22046.5	22642.5
	2222	22065.1	22661.1
	2236	22108.5	22704.5
West Coast:	401	4063.0	4357.4
	416	4109.5	4403.9
	417	4112.6	4407.0
	804	8204.3	8728.2
	809	8219.8	8743.7
	814	8235.3	8759.2
	822	8260.1	8784.0
	1201	12330.0	13100.8
	1202	12333.1	13103.9
	1203	12336.2	13107.0
	1229	12416.8	13187.6
	1230	12419.9	13190.7
	1602	16463.1	17236.0
	1603	16466.2	17239.1
	1616	16506.5	17279.4
	1624	16531.3	17304.2
	2214	22040.3	22636.3
	2223	22068.2	22664.2
	2228	22083.7	22679.7
	2236	22108.5	22704.5
Gulf Coast:	404	4072.3	4366.7
	405	4075.4	4369.8
	414	4103.3	4397.7
	419	4118.3	4413.2
	824	8266.3	8790.2
	829	8281.8	8805.7
	830	8284.9	8808.8
	1212	12364.1	13134.9
	1225	12404.4	13175.2
	1226	12407.5	13178.3
	1607	16478.6	17251.5
	1632	16556.1	17329.0
	1641	16584.0	17356.9
	2227	22060.6	22676.6
	2231	22093.0	22689.0
	2237	22111.6	22707.6
Great Lakes:	405	4075.4	4369.8
	409	4087.8	4382.2
	418	4115.7	4410.1
	826	8272.5	8796.4
Hawaii:	418	4115.7	4410.1
	808	8216.7	8740.6
	1222	12395.1	13165.9
	1601	16460.0	17232.9
Caribbean:	604	6209.3	6515.7
	605	6212.4	6518.8
	1602	16463.1	17236.0
	1603	16466.2	17239.1
	2223	22068.2	22664.2

(c) *Working frequencies in the 156-162 MHz band.* Initial grants will be limited to one working frequency. An additional frequency may be assigned when the assigned working frequency is also used by a foreign station near enough to result in harmful radio interference by simultaneous operation or when the channel occupancy of the assigned frequency or frequencies exceeds 40 percent during its busiest hours of operation. An application for assignment of an additional working frequency based on channel occupancy must be accompanied by a factual showing that for any 4 days within a 10-consecutive-day period of station operation in each of 2 months immediately prior to the filing of the application, the assigned frequency or frequencies was in average daily use for exchanging communications at least 40 percent of the 3 busiest hours of each day, of which not more the half of the use time was waiting or setup time. For purposes of this paragraph, an application for a frequency which overlaps by 70 percent or more the coverage area of a frequency already authorized for use by a station licensed to the same applicant or substantially the same applicant will be considered an application for an additional frequency.

Working Carrier Frequency Pairs in the 156–162 MHz Band

Channel designator	Carrier frequency (MHz)	
	Ship transmit	Coast transmit
24	157.200	161.80
84	157.225	161.82

Working Carrier Frequency Pairs in the 156–162 MHz Band [1]

Channel designator	Carrier frequency (MHz)	
	Ship transmit	Coast transmit
25	157.250	161.850
85[2]	157.275	161.875
26	157.300	161.900
86	157.325	161.925
27	157.350	161.950
87	157.375	161.975
28	157.400	162.000
88[3]	157.425	162.025

[1] For special assignment of frequencies in this band in certain areas of Washington State, the Great Lakes and the east coast of the United States pursuant to arrangements between the United States and Canada, see subpart B of this part.

[2] The frequency pair 157.275/161.875 MHz is available for assignment on a primary basis to ship and public coast stations. In Alaska it is also available on a secondary basis to private mobile repeater stations.

[3] Within 75 miles of the United States/Canada border, in the area of the Puget Sound and the Strait of Juan de Fuca and its approaches, the frequency 157.925 MHz is available for use by ship stations for public correspondence communications only. Seventy five miles from the United States/Canada border 157.425 MHz is available for intership and commerical communications. Outside the Puget Sound area and its approaches and the Great Lakes, 157.425 MHz is available for communications between commercial fishing vessels and associated aircraft while engaged in commercial fishing activities.

(d) *Working frequencies in the Mississippi River System.* The Mississippi River System includes the Mississippi River and connecting navigable waters other than the Great Lakes. The following table describes the working carrier frequencies below 2750.0 kHz for simplex radiotelephony communications for use between public coast stations serving the Mississippi River System and ship stations within communication service range, whether or not the ship is operating within the confines of the Mississippi River System.

Mississippi River System Working Frequencies

Carrier frequency (kHz)		
[1] 2086.0	6209.3	8725.1
2782.0	6212.4	8737.5
4063.0	6515.7	12333.1
4087.8	6518.8	13103.9
4115.7	8201.2	16518.9
[2] 4410.1	8213.6	17291.8

[1] Limited to a maximum transmitter output power of 150 atts (PEP)

[2] J3E emission only.

(e) *Canada/U.S.A. channeling arangement frequencies.* The VHF freuencies assignable to ship and coast tations in the State of washington nd their usage limitations purusant to the Canada/U.S.A. channeling arrangement are described in subpart B of this part.

[51 FR 31213, Sept. 2, 1986, as amended at 52 FR 35245, Sept. 18, 1987; 52 FR 48439, Dec. 22, 1987]

§ 80.373 Private communications frequencies.

This section describes the carrier frequencies assignable for ship-to-ship and ship-to-coast private communications.

(a) *Special requirements for private coast stations.* Assignment to private coast stations of radiotelephony frequencies in the 2000–27500 kHz band are subject to the following:

(1) Private coast stations must see J3E emission.

(2) On 2182 kHz, private coast stations must be capable of receiving J3E and H3E emissions.

(3) Except in the Mississippi River System and Great Lakes, private coast stations serving lakes or rivers are not authorized on the 2000–2850 kHz band.

(4) Private coast stations may use DSC for calling on their assigned frequencies in the 2000-27500 kHz band and on those frequencies in the 156-162 MHz band which are allocated for maritime control, commercial and noncommercial communications.

(b) *Frequencies in the 2000-27500 kHz band for intership safety and other communications.* This paragraph describes the geographic areas of operation and the frequencies and liminations in the band available for assignment for intership safety and operational simplex radiotelephone communications.

(1) *Frequencies avaiable.*

Carrier frequency (kHz)	Geographic area
2003.0	Great Lakes only.
2082.5 [1, 2]	All areas.
2093.0 [1]	All areas.
2142.0	Pacific coast areas south of 42 degrees north on a day basis only.
2203.0 0 [2]	Gulf of Mexico.
2214.0 [1]	All areas.
2638.0 [1]	All areas.
2670.0	All areas.
2738.0 [1]	All areas except the Great Lakes.
2830.0	Gulf of Mexico only.

[1] Limited to a peak envelope power of 150 watts.

[5] Available on a secondary basis for intership communications by ships involved in non-commercial fishing

(2) Except for 2093.0 kHz and 2214.0 kHz the frequencies shown in paragraph (b)(1) of this section are authorized primarily for intership safety communications in the indicated geographic area.

(3) Except for the frequencies 2093.0 kHz, 2214.0 Khz and 2670.0 kHz the frequencies shown in paragraph (b)(1) of this section may be used on a noninterference basis to safety communications, for operational communications and in the case of commercial transport ships and ships of municipal and state governments, for business communications.

(4) Ship stations may communicate with government coast stations on 2003.0 kHz about passage of vessels. Interference must not be caused to communications on the St. Lawrence Seaway and on the St. Mary's River.

(5) Ship stations may use 2670.0 kHz for communications with coast and ship stations of the U.S. Coast Guard. When a ship is not equipped to transmit on 2670.0 kHz or in the band 156-162 MHz the frequency 2003.0 kHz may be used on the Great Lakes for communications must not cause harmful interference to intership safety, operational and business communications.

(6) Navigational communications between ships and private coast stations may be exchanged on 2738.0 kHz and 2830.0 kHz. The frequencies 2214.0 kHz2738.0 kHz and 2830.0 kHz are assignable to private coast stations upon a showing that they need to communicate with commercial transport or Government ships. Private coast station applicants must show that public coast stations do not provide the required communications and harmful interference will not be caused to the intership use of these frequencies. The transmitter power must not exceed 150 watts. If 2214.0 kHz is authorized for ships, intership communication is also authorized. The geographic limitations to the frequencies 2738.0 kHz and 2830.0 kHz do not prohibit intership communication of less than 200 statute miles when only one of the ship stations is within a permitted use geographic area.

(7) Private aircraft stations may communicate with ship stations on 2738.0 kHz and 2830.0 kHz if:

(i) The communications are limited to business or operational needs of the vessel while it is engaged in commercial fishing activities in the open sea or adjacent waters;

(ii) Harmful interference must not be caused to intership communications;

(iii) The maximum output power used for such communication must not exceed 25 watts;

(c) *Frequencies in the 2000-27500 kHz bands for business and operational communications.* (1) The following table describes the frequencies available in the 2000-27500 kHz bands fo business and operational radiotelephone simplex communications between ship and private coast station or between ship stations:

Business and Operational Frequencies in the 2000-27500 kHz Band

Carrier frequency (kHz)			
2065.0 [1,3]	4419.4	8294.2	16593
2079.0 [1,3]	5680.0 [4]	12429.2	22124
2096.5 [1]	6218.6	12432.3	22127
3023.0 [4]	6221.6	12435.4	22130
4125.0 [2]	6521.9	16587.1	22133
4143.6	8291.1	16590.2	2213

[1] Limited to peak envelope power of 150 watts.

[2] Available domestically for distress and safety and inter tionally for calling purposes.

[3] The frequencies 2065.0 kHz and 2079.0 kHz must coordinated with Canada.

[4] The frequencies 3023.0 kHz and 5680.0 kHz are av able to private coast stations licensed to state and lo governments and any scene-of action ships for the purp of search and rescue scene-of-action coordination inclu communications with any scene-of-action aircraft.

(2) Assignment of these frequenci is subject to the following general li itations:

(i) These frequencies are shared a are not available for the exclusive u of any station. No more than one f quency from each of the frequen bands will be authorized to a priv station without justification;

(ii) The emissions must be J except that when DSC is used t emission must be F1B or J2B; and

(iii) Maximum transmitter out power is limited to 1 kW except noted.

(d) *Radioprinter frequencies.* (1) T following table describes the ba available for radioprinter simp communications between ship and private coast stations:

Frequency bands (kHz)	
2107–2170	4750–4850
2194–2495	5060–5450
2505–2850	5730–5950
3155–3400	7300–8100
4438–4650	

(2) Ship stations may conduct radioprinter communications with private coast stations on frequencies within these bands which are assigned to their associated private coast stations;

(3) Any alphanumeric code may be used; and

(4) The bandwidth of radioprinter communications on frequencies within these bands must not exceed 300 Hz.

(e) *Frequencies in the 2000–27500 kHz band for medical advisory communications.* (1) Private coast stations may be authorized to use any frequencies within the 2030–27500 kHz band that are allocated to Government and non-Government fixed or fixed and mobile radio services shown in the Commission's Table of Frequency Allocations contained in § 2.106 of this chapter for communications with ship stations to provide medical treatment information or advice. Assignment of these frequencies is subject to the following limitations:

(2) No protection is provided from harmful interference caused by foreign stations; and

(3) A private coast station must cease operations on a frequency that causes harmful interference to a foreign station.

(f) *Frequencies in the 156–162 MHz band.* The following tables describe the carrier frequencies available in the 156–162 MHz band for radiotelephone communications between ship and private coast stations:

Frequencies in the 156–162 MHz band

Channel designator	Carrier frequency (MHz)		Points of communication (Intership and between coast and ship unless otherwise indicated)
	Ship transmit	Coast transmit	
Port Operations			
01 [1]	156.050	156.050	
63 [1]	156.175	156.175	
05 [2]	156.250	156.250	
65	156.275	156.275	
66	156.325	156.325	
12 [3]	156.600	156.600	
73	156.675	156.675	
14 [3]	156.700	156.700	
74	156.725	156.725	
77 [4]	156.875		Intership only.
20 [13]	157.000	161.600	
Navigational (Bridge-to-Bridge)[5]			
13 [6]	156.650	156.650	
67 [7]	156.375	156.375	
Commercial			
01 [1]	156.050	156.050	
63 [1]	156.175	156.175	
07	156.350	156.350	
67 [7]	156.375		Intership only.
08	156.400		Do.
09	156.450	156.450	
10	156.500	156.500	
11 [3]	156.550	156.550	
18	156.900	156.900	
19	156.950	156.950	
79	156.975	156.975	
80	157.025	157.025	
88 [8]	157.425		Intership only.
Digital Selective Calling			
70	156.525	156.525	
Noncommercial			
68	156.425	156.425	
09	156.450	156.450	
69	156.475	156.475	
71	156.575	156.575	
72	156.625		Intership only.
78	156.925	156.925	
79	156.975	156.975	Great Lakes only.
80	157.025	157.025	Do.
Distress, Safety and Calling			
16	156.800	156.800	EPRIR
Intership Safety			
06	156.300		a. Intership, or b. For SAR: Ship and aircraft for the U.S. Coast Guard.
Environmental			
15 [18]		156.750	Coast to ship only.
Maritime Control			
17 [9], [10]	156.850	156.850	

Frequencies in the 156–162 MHz band

Channel designator	Carrier frequency (MHz)		Points of communication (intership and between coast and ship unless otherwise indicated)
	Ship transmit	Coast transmit	
Liaison, U.S. Coast Guard			
22 [11]	157.100	157.100	Ship, aircraft, and coast stations of the U.S. Coast Guard and at Lake Mead, Nev., ship and coast stations of the National Park Service, U.S. Department of the Interior.

[1] 156.[illegible]0 MHz and 156.175 MHz are available for port operations and commercial communications purposes when used only within the U.S. Coast Guard designated Vessel Traffic Services (VTS) area of New Orleans, on the lower Mississippi River from the various pass entrances in the Gulf of Mexico to Devil's Swamp Light at River Mile 242.4 above head of passes near Baton Rouge.

[2] 156.250 MHz is available for port operations communications use only within the U.S. Coast Guard designated VTS radio protection areas of New Orleans and Houston described in § 80.383.

[3] 156.550 MHz, 156.600 MHz and 156.700 MHz are available in the U.S. Coast Guard designated port areas only for VTS communications and in the Great Lakes available primarily for communications relating to the movement of ships in sectors designated by the St. Lawrence Seaway Development Corporation or the U.S. Coast Guard. The use of these frequencies outside VTS and ship movement sector protected areas is permitted provided they cause no interference to VTS and ship movement communications in thier respective designated sectors.

[4] Use of 156.875 MHz is limited to communications with pilots regarding the movement and docking of ships. Normal output power must not exceed 1 watt.

[5] 156.375 MHz and 156.650 MHz are available primarily for intership navigational communications. These frequencies are available between coast and ship on a secondary basis when used on or in the vicinity of locks or drawbridges. Normal output power must not exceed 1 watt. Maximum output power must not exceed 10 watts for coast stations or 25 watts for ship stations.

[6] On the Great Lakes, in addition to bridge-to-bridge communications, 156.650 MHz is available for vessel control purposes in established vessel traffic systems. 156.650 MHz is not available for use in the Mississippi River from South Pass Lighted Whistle Buoy "2" and Southwest Pass entrance Midchannel Lighted Whistle Buoy to mile 242.4 above Head of Passes near Baton Rouge. Additionally it is not available for use in the Mississippi River-Gulf Outlet, the Mississippi River-Gulf Outlet Canal, and the Inner Harbor Navigational Canal, except to aid the transition from these areas.

[7] Use of 156.375 MHz is available for navigational communications only in the Mississippi River from South Pass Lighted Whistle Buoy "2" and Southwest Pass entrance Midchannel Lighted Whistle Buoy to mile 242.4 above head of Passes near Baton Rouge, and in addition over the full length of the Mississippi River-Gulf Outlet Canal from entrance to its junction with the Inner Harbor Navigation Canal, and over the full length of the Inner Harbor Navigation Canal from its junction with the Mississippi River to its entry to Lake Pontchartrain at the New Seabrook vehicular bridge.

[8] Within 75 miles of the United States/Canada border, in the area of the Puget Sound and the Strait of Juan de Fuca and its approaches, 157.425 MHz is half of the duplex pair designated as Channel 88. In this area, Channel 88 is available to ship stations for communications with public coast stations only. More than 75 miles from the United States/Canada border in the area of the Puget Sound and the Strait of Juan de Fuca, its approaches, the Great Lakes, and the St. Lawrence Seaway, 157.425 MHz is available for intership and commercial communications. Outside Puget Sound area and its approaches and the Great Lakes, 157.425 MHz is also available for communications between commercial fishing vessels and associated aircraft while engaged in commercial fishing activities.

[9] When the frequency 156.850 MHz is authorized, it may be used additionally for search and rescue training exercises conducted by state or local governments.

[10] The frequency 156.850 MHz is additionally available to coast stations on the Great Lakes for transmission of scheduled Coded Marine Weather Forecasts (MAFOR), Great Lakes Weather Broadcast (LAWEB) and unscheduled Notices to Mariners or Bulletins. F3C and J3C emissions are permitted. Coast Stations on the Great Lakes must cease weather broadcasts which cause interference to stations operating on 156.800 MHz until the interference problem is resolved.

[11] The frequency 157.100 MHz is authorized for search and rescue training exercises by state or local government in conjunction with U.S. Coast Guard stations. Prior U.S. Coast Guard approval is required. Use must cease immediately on U.S. Coast Guard request.

[12] For intership communications, simplex operation must be used on the frequency 157.000 MHz.

[13] Available for assignment to coast stations, the use of which is in accord with an agreed program, for the broadcast of information to ship stations concerning the environmental conditions in which vessels operate, i.e., weather; sea conditions; time signals; notices to mariners; and hazards to navigation.

(g) On-board communications: This section describes the carrier frequency pairs assignable for on-board mobile radiotelephony communications. The center of the on-board repeater antenna must not be located more than 10 feet above the ship's working deck. These frequencies are available on a shared basis with stations in the Business Radio Service.

Channel	Frequencies for On-Board Communications	
	Carrier frequency (MHz)	
	On-board mobile station	On-board repeater station [1]
1	467.750	457.52
2	467.775	457.55
3	467.800	457.575
4	467.825	457.60

[1] These frequencies may also be assigned to mobile stations for single frequency simplex operation.

(h) *Repeater frequencies in Alaska.* The following frequencies are assignable on a primary basis to public and on a secondary basis to private coast stations in Alaska for maritime repeater operations:

Repeater receive: 157.275 MHz
Repeater transmit: 161.875 MHz

(i) *Frequencies in the 1600-5450 kHz band for private communications in Alaska.* The following frequencies are also available for simplex radiotelephone communications between ship and private fixed stations located in the State of Alaska:

CARRIER FREQUENCIES (KHZ)

1619.0	2382.0	2563.0
1622.0	2419.0	2566.0
1643.0	2422.0	2590.0
1646.0	2427.0	2616.0
1649.0	2430.0	3258.0
1652.0	2447.0	[1] 3261.0
1705.0	2450.0	4366.7
1709.0	2479.0	4369.8
1712.0	2482.0	4397.7
2003.0	2506.0	4403.9
2006.0	2509.0	4422.5
2115.0	2512.0	4425.6
2118.0	2535.0	5167.5
2379.0	2538.0	

[1] Ship stations must limit use of 3261.0 kHz to communications over distances which cannot be reached by the use of a frequency below 2700 kHz or above 156.000 MHz.

(j) *Frequencies for portable ship stations.* VHF frequencies authorized for stations authorized carrier frequencies in the 156.275 MHz to 157.450 MHz and 161.575 MHz to 162.025 MHz bands may also be authorized as marine utility stations. Marine-utility stations on shore must not cause interference to any VHF or coast station, VHF or UHF land mobile base station, or U.S. Government station.

[51 FR 31213, Sept. 2, 1986; 51 FR 34984, Oct. 1, 1986, as amended at 52 FR 35245, Sept. 18, 1987; 53 FR 17052, May 13, 1988; 54 FR 8542, Mar. 1, 1989; 54 FR 40059, Sept. 29, 1989]

RADIODETERMINATION

80.375 Radiodetermination frequencies.

This section describes the carrier requencies assignable to radiodeter- ination stations. Only direction find- ng radar stations will be authorized n land.

(a) *Direction finding frequencies.* he carrier frequencies assignable to nip stations for direction finding op- rations are:

Carrier frequency
410 kHz
500 kHz
2182 kHz
8364 kHz
121.500 kHz
243.000 kHz

(1) Except in distress the assigned frequency for direction finding is 410 kHz;

(2) Ship stations may use 500 kHz for direction finding exclusively in Regions 1 and 3 outside areas of heavy radio traffic. Use must not interfere with distress urgency and safety signals or calls and replies.

(b) *Radiodetermination frequencies for cable-repair ships.* Except in Region 1 the channels in the 285-325 kHz band are assignable to ship stations for cable-repair radiodetermination operations. In Region 1 the channels available for assignment for such operations are limited to the 285-315 kHz band. The conditions of use of these channels are set forth in subpart X of this part. Channel usage must comply with the following requirements:

(1) They are not permitted within the territorial waters of a foreign country;

(2) Their output power must not exceed 15 watts; and

(3) They must not cause interference to any maritime station in the radionavigation service.

(c) *Radiodetermination frequencies below 500 MHz.* The frequencies 154.585 MHz, 159.480 MHz, 160.725 MHz, 160.785 MHz, 454.000 MHz and 459.000 MHz are authorized for offshore radiolocation and associated telecommand operations under a ship station license provided:

(1) The use of these frequencies is related to the ship's commercial operations;

(2) The station antenna height does not exceed 20 feet above sea level in a buoy station or 20 feet above the mast of the ship in which it is installed.

(d) *Radiodetermination frequency bands above 2400 MHz.* (1) The radiodetermination frequency bands assignable to ship and shore stations including ship and shore radar and transponder stations are as follows: 2450-2500 MHz; 2900-3100 MHz; 5460-5650 MHz; 9300-9500 MHz; and 14.00-14.05 GHz.

(2) Assignment of these bands to ship and coast stations are subject to the following conditions:

(i) The 2450-2500 MHz band may be used only for radiolocation on the condition that harmful interference must not be caused to the fixed and mobile services. No protection is provided from interference caused by emissions from industrial, scientific, or medical equipment;

(ii) The use of the 2900-3100 MHz, 5470-5650 MHz and 9300-9500 MHz bands for radiolocation must not cause harmful interference to the radionavigation and Government radiolocation services. Additionally, the use of the 2900-3000 MHz band for radiolocation must not cause harmful interference to the Government meteorological aids service.

(iii) In the 2920-3100 MHz and 9320-9500 MHz bands the use of fixed-frequency transponders for radionavigation is not permitted;

(iv) Non-Government radiolocation stations may be authorized in the 5460-5470 MHz band on the condition that harmful interference shall not be caused to the aeronautical or maritime radionavigation services or to Government radiolocation service;

(v) The use of the 5460-5650 MHz band for radionavigation is limited to shipborne radar;

(vi) The use of the 14.00-14.05 GHz band will be authorized only for test purposes and maritime radionavigation on a secondary basis to the fixed-satellite service; and

(vii) Selectable transponders must be authorized under Part 5 of the Commission rules until technical standards for their use are developed.

(3) In addition to the conditions in (2) of this paragraph ship stations are subject to the following conditions:

(i) Transponders used for safety purposes will be authorized in the 2900-3100 MHz, 5470-5650 MHz and 9300-9500 MHz bands. Transponders used for non-safety purposes will be confined to the 2930-2950 MHz, 5470-5480 MHz and 9300-9500 MHz subbands only;

(ii) In the 2900-2920 MHz and 9300-9320 MHz subbands the use of radars other than those installed prior to January 2, 1976, is not permitted;

(iii) In the 2920-3100 MHz and 9320-9500 MHz bands non-selectable transponders will be authorized only for safety purposes;

(iv) Non-selectable transponders must not be used to enhance detection of marine craft;

(4) In the 2920-3100 MHz and 9320-9500 MHz bands shore station radar transponders used only as racons will be authorized.

(e) In addition to the other technical requirements contained in subpart E of this part search and rescue transponder stations must meet the following technical standards contained in the latest international Radio Consultative Committee (CCIR) Recommendation 628 titled "Technical Characteristics for a Search and Rescue Radar Transponder":

(1) Operate in the 9300-9500 MH band;

(2) Be horizontally polarized at thei source;

(3) Have an effective receiver sensitivity including its antenna gain bette than −50 dBm;

(4) Operate within specifications between the temperatures of −20 an +50 degrees Celsius;

(5) Operate within specifications fo at least 48 hours at 0 degrees Celsiu without changing batteries;

(6) Have a sawtooth sweep with a microseconds ± 0.5 microseconds rat and return of less than 0.5 microse conds;

(7) Have a pulse emission of 100 mi croseconds maximum duration;

(8) Have a recovery time followin excitation of 10 microseconds or less;

(9) Have a delay between receipt of radar signal and start of transmission of 1.25 microseconds or less;

(10) Have an antenna whose vertica beamwidth is no less than 25 degree and its azimuthal beamwidth is omni directional within 2 dB; and

(11) Suppress interference caused b the interrogating radar antenna's side lobes.

[51 FR 31213, Sept. 2, 1986, as amended 52 FR 7419, Mar. 11, 1987; 55 FR 6394, Fe 23, 1990]

SHIP EARTH STATIONS

§ 80.377 Frequencies for ship earth st tions.

The frequency band 1626.5-1645 MHz is assignable for communicatio radiodetermination and telecommand messages, and developmental operations that are associated with the position, orientation and operational functions of maritime satellite equipment. The frequency band 1645.5–1646.5 MHz is reserved for use in the Future Global Maritime Distress and Safety System (FGMDSS).

AIRCRAFT STATIONS

§ 80.379 Maritime frequencies assignable to aircraft stations.

This section describes the maritime frequencies assignable to aircraft stations for simplex operations:

(a) Available frequencies:

Carrier frequency	Conditions of use
2738 kHz	(1)
2830 kHz	(1)
3023 kHz	(2)
4125 kHz	(3)
5680 kHz	(2)
121.500 MHz	(4)
123.100 MHz	(4)
156.300 MHz	(5)
156.375 MHz	(5)
156.400 MHz	(5)
156.425 MHz	(5)
156.450 MHz	(5)
156.625 MHz	(5)
156.800 MHz	(5)
156.900 MHz	(5)
157.100 MHz	(6)
157.425 MHz	(5)(7)

(b) The conditions of use of the carrier frequencies in paragraph (a) of this section, are:

(1) For permissible geographic areas of operation see § 80.373(b)(1). For other limitations see § 80.373(b)(7);

(2) Aircraft and ship stations may use 3023.0 kHz and 5680.0 kHz for search and rescue scene-of-action coordination including communications between these stations and participating land stations. Stations using these frequencies must use J3E emission;

(3) Assignable for distress and safety communications between aircraft and maritime mobile stations;

(4) Assignable for search and rescue between ships and aircraft. Stations using these frequencies must use A3E emission;

(5) These frequencies may be used by aircraft stations when:

(i) The altitude of aircraft stations does not exceed 1,000 feet, except for reconnaissance aircraft participating in icebreaking operations where an altitude of 1,500 feet is allowed;

(ii) The mean power of aircraft stations must not exceed five watts;

(iii) Communications are limited to operations in which the maritime mobile stations are primarily involved and where direct communications between the aircraft and the ship or coast station is required;

(iv) Stations may use 156.300 MHz for safety purposes only;

(v) Stations may use 156.800 MHz for distress, safety and calling only; and

(vi) Use of 156.375 MHz by aircraft is not permitted in the New Orleans VTS area specified in §80.383.

(6) The use of 157.100 MHz is limited to communications with stations of the Department of Interior at Lake Mead, Nevada; and

(7) Commercial fishing vessels and associated aircraft may use 157.425 MHz while engaged in commercial fishing activities except within 75 miles of the United States/Canada border and Puget Sound and the Strait of Juan de Fuca and its approaches, the Great Lakes, and the St. Lawrence Seaway.

OPERATIONAL FIXED STATIONS

§ 80.381 Frequencies for operational fixed stations.

The following carrier frequencies in the 72–76 MHz band are assignable to operational fixed stations using vertical polarization, if no harmful interference is caused to TV reception on Channels 4 and 5. These frequencies are shared with the Land Mobile and Aviation Radio Services.

OPERATIONAL FIXED FREQUENCIES IN THE 72–76 MHZ BAND

CARRIER FREQUENCY IN MHZ

72.02	72.28	72.64	72.90	75.68	75.94
72.04	72.30	72.66	72.92	75.70	75.96
72.06	72.32	72.68	72.94	75.72	75.98
72.08	72.34	72.70	72.96	75.74	
72.10	72.36	72.72	72.98	75.76	
72.12	72.38	72.74	75.42	75.78	
72.14	72.40	72.76	75.46	75.80	
72.16	72.42	72.78	75.50	75.82	

OPERATIONAL FIXED FREQUENCIES IN THE 72-76 MHz BAND—Continued

72.18	72.46	72.80	75.54	75.84	
72.20	72.50	72.82	75.58	75.86	
72.22	72.54	72.84	75.62	75.88	
72.24	72.58	72.86	75.64	75.90	
72.26	72.62	72.88	75.66	75.92	

[51 FR 31213, Sept. 2, 1986, as amended at 54 FR 40059, Sept. 29, 1989]

VESSEL TRAFFIC SERVICES SYSTEM (VTS)

§ 80.383 Vessel Traffic Services (VTS) system frequencies.

This section describes the carrier frequencies available for use in the Coast Guard Vessel Traffic Services (VTS) systems within the designated geographic radio protected areas.

(a) Assigned frequencies:

VESSEL TRAFFIC CONTROL FREQUENCIES

Carrier frequencies (MHz)	Geographic areas
156.250	Seattle.
156.550	New York [1], New Orleans [1], Houston.
156.600	New York [1], New Orleans [1], Houston.
156.700	New York [1], New Orleans [1], Seattle.

[1] Until further notice, this frequency is available for use as permitted by § 80.373(f), notwithstanding the provisions of footnote 3 that are applicable to the VTS system. Availability is a result of the closure of the VTS systems for the port areas of New York and New Orleans. If the United States Coast Guard reestablishes one or both of these systems, the Commission may require operations pursuant to such conditional licenses for this frequency to cease, or may choose not to renew such conditional licenses. All licenses for this frequency will be expressly conditioned upon the continued availability of the frequency for non-VTS use.

(b) The U.S. Coast Guard designated radio protection areas for VTS are as follows:

(1) *New York.* The rectangle between north latitudes 40 degrees and 42 degrees and west longitudes 71 degrees and 74 degrees 30 minutes;

(2) *New Orleans.* The rectangle between North latitudes 27 degrees 30 minutes and 31 degrees 30 minutes and West longitudes 87 degrees 30 minutes and 93 degrees;

(3) *Houston.* The rectangle between north latitudes 28 degrees 30 minutes and 30 degrees 20 minutes and west longitudes 93 degrees 30 minutes and 96 degrees; and

(4) *Seattle (Puget Sound).* From 49 degrees North 121 degrees West on the United States-Canadian Border, south to 46 degrees 30 minutes North 121 degrees West, then west to 46 degrees 30 minutes North 125 West, then north to 48 degrees 30 minutes North 125 degrees West, then east to the United States-Canadian Border and thence along the United States-Canadian Border to 49 degrees North 121 degrees West.

(c) The use of the frequencies shown in paragraph (a) of this section is permitted in areas outside the Coast Guard radio protection areas provided there is no interference to VTS communications within the VTS areas.

[51 FR 31213, Sept. 2, 1986, as amended at 52 FR 35245, Sept. 18, 1987; 54 FR 8746, Mar. 2, 1989]

AUTOMATED SYSTEMS

§ 80.385 Frequencies for automated systems.

This section describes the carrier frequencies for the Automated Maritime Telecommunications System (AMTS) and for other automated multi-station systems.

(a) *Automated Maritime Telecommunications System (AMTS).* (1) The Automated Maritime Telecommunications System (AMTS) is an integrated and interconnected maritime communications system serving ship stations and offshore fixed platforms in the Mississippi River, its connecting waterways and the offshore waters of the Gulf of Mexico.

(2) The following carrier frequency pairs are available for radiotelephony, facsimile and teleprinter communications. Coast stations within 169 kilometers (105 miles) of a TV channel 13 station will not be authorized on the frequencies in Groups C and D. AMTS operations must not cause harmful interference to the U.S. Navy SPASUR system which operates in the band 216.880-217.080 MHz.

Channel No.	Carrier frequency (MHz)		
	Ship transmit	Coast transmit	Gro
101	218.0125	216.0125	D
102	218.0375	216.0375	
103	218.0625	216.0625	

Channel No.	Carrier frequency (MHz)		
	Ship transmit	Coast transmit	Group
104	218.0875	216.0875	
105	218.1125	216.1125	
106	218.1375	216.1375	
107	218.1625	216.1625	
108	218.1875	216.1875	
109	218.2125	216.2125	
110	218.2375	216.2375	
111	218.2625	216.2625	
112	218.2875	216.2875	
113	218.3125	216.3125	
114	218.3375	216.3375	
115	218.3625	216.3625	
116	218.3875	216.3875	
117	218.4125	216.4125	
118	218.4375	216.4375	
119	218.4625	216.4625	
120	218.4875	216.4875	
121	218.5125	216.5125	C
122	218.5375	216.5375	
123	218.5625	216.5625	
124	218.5875	216.5875	
125	218.6125	216.6125	
126	218.6375	216.6375	
127	218.6625	216.6625	
128	218.6875	216.6875	
129	218.7125	216.7125	
130	218.7375	216.7375	
131	218.7625	216.7625	
132	218.7875	216.7875	
133	218.8125	216.8125	
134	218.8375	216.8375	
135	218.8625	216.8625	
136	218.8875	216.8875	
137	218.9125	216.9125	
138	218.9375	216.9375	
139	218.9625	216.9625	
140	218.9875	216.9875	
141	219.0125	217.0125	B
142	219.0375	217.0375	
143	219.0625	217.0625	
144	219.0875	217.0875	
145	219.1125	217.1125	
146	219.1375	217.1375	
147	219.1625	217.1625	
148	219.1875	217.1875	
149	219.2125	217.2125	
150	219.2375	217.2375	
151	219.2625	217.2625	
152	219.2875	217.2875	
153	219.3125	217.3125	
154	219.3375	217.3375	
155	219.3625	217.3625	
156	219.3875	217.3875	
157	219.4125	217.4125	
158	219.4375	217.4375	
159	219.4625	217.4625	
160	219.4875	217.4875	
161	219.5125	217.5125	A
162	219.5375	217.5375	
163	219.5625	217.5625	
164	219.5875	217.5875	
165	219.6125	217.6125	
166	219.6375	217.6375	
167	219.6625	217.6625	
168	219.6875	217.6875	
169	219.7125	217.7125	
170	219.7375	217.7375	
171	219.7625	217.7625	
172	219.7875	217.7875	
173	219.8125	217.8125	
174	219.8375	217.8375	
175	219.8625	217.8625	
176	219.8875	217.8875	
177	219.9125	217.9125	
178	219.9375	217.9375	
179	219.9625	217.9625	
180	219.9875	217.9875	

(b) *Narrowband operations in AMTS.* AMTS licensees may operate on frequencies offset from the assignable channels specified in paragraph (a)(2) of this section provided such licensees are also licensed for channels on each side of the offset frequency. Licensees using offset frequencies must conform with all other conditions of operation.

(c) *Automated multi-station system.* Great Lakes Region. The following table describes the assignable carrier frequency pairs to provide communication services including automated calling, teleprinter and facsimile:

Channel designator	Carrier frequency (MHz)	
	Ship transmit	Coast transmit
17	None	[1] 156.850
84	157.225	161.825
85	157.275	161.875
86	157.325	161.925
87	157.375	161.975

[1] The frequency 156.850 MHz is used only to transmit scheduled weather broadcasts.

[51 FR 31213, Sept. 2, 1986, as amended at 54 FR 29041, July 11, 1989]

ALASKA FIXED STATIONS

§ 80.387 Frequencies for Alaska fixed stations.

(a) The carrier frequencies listed in (b) of this section are assignable for point-to-point simplex radiotelephone communications between private fixed stations in Alaska. The frequency pairs listed in paragraph (d) of this section are assignable for point-to-point duplex radiotelephone communications between private and public fixed stations in Alaska. Fixed stations in Alaska authorized to share carrier frequencies with the maritime mobile service must always give priority on such frequencies to maritime distress, urgency and safety communications.

(b) *Alaska-private fixed station frequencies:*

Carrier frequency (kHz)		
1643.0	2430.0	2773.0
1646.0	2447.0	3164.5
1649.0	2450.0	3183.0
1652.0	2463.0	3198.0
1657.0	2466.0	3201.0
[1] 1660.0	2471.0	3258.0
1705.0	2479.0	3261.0
1709.0	2482.0	3303.0
1712.0	2506.0	3365.0
2003.0	2509.0	4035.0
2006.0	2512.0	5167.5[3]
2115.0	2535.0	5204.5
2118.0	2538.0	[2] 6948.5
2253.0	2563.0	[2] 7368.5
2400.0	2566.0	8067.0
2419.0	2601.0	8070.0
2422.0	2616.0	[2] 11437.0
2427.0	2691.0	[2] 11601.5

[1] Use of 1660.0 kHz must be coordinated to protect radiolocation on adjacent channels.

[2] Peak envelope power must not exceed 1 kW for radiotelephony. Teleprinter use is authorized.

[3] The frequency 5167.5 kHz is available for emergency communications in Alaska. Peak envelop power of stations operating on this frequency must not exceed 150 watts. When a station in Alaska is authorized to use 5167.5 kHz, such station may also use this frequency for calling and listening for the purpose of establishing communications.

(c) Use of the frequencies in paragraph (b) of this section must meet the following conditions:

(1) Communications between private coast and private fixed stations are prohibited; and

(2) Station licensees must not charge for third party communication services between their station and any other private fixed station.

(d) The following carrier frequency pairs are assignable for point-to-point communications between public fixed and private fixed stations:

Public fixed station frequencies (kHz)	Private fixed Station frequencies (kHz)
[1] 2312.0	2632.0
2604.0	2256.0
2781.0	[3] 2474.0
2784.0	2694.0
3167.5	3354.0
3180.0	2776.0
3241.0	3357.0
3362.0	3238.0
[2] 4791.5	5207.5
5370.0	[4] 5134.5, [4] 5137.5

[1] This frequency is assignable on a primary basis to public coast stations and on a secondary basis to public fixed stations.

[2] Teleprinter use is authorized.

[3] Peak envelope power must not exceed 1 kW.

[4] Licensees must cease all communications on 5134.5 kHz and 5137.5 kHz when notified by the State of Alaska of an emergency or disaster. Licensees may resume communication on these frequencies when notified by the State of Alaska that the disaster or harmful interference has ended.

(e) The public fixed station frequencies are assignable to common carriers.

(f) The private fixed station frequencies described in paragraph (d) of this section are assignable to private entities located in areas where common carrier facilities are not available. Private fixed stations operating on the frequencies in paragraph (d) of this section, must communicate with public fixed stations only. Private fixed stations are permitted to provide third party communications between their station and the public fixed stations. A charge for such service is prohibited.

(g) U.S. Government frequencies will be authorized if the Commission determines that the assignment is in the public interest.

[51 FR 31213, Sept. 2, 1986, as amended at 52 FR 35245, Sept. 18, 1987]

MARITIME SUPPORT STATIONS

§ 80.389 Frequencies for maritime support stations.

(a) *Marine receiver test.* Maritime support stations will be authorized to conduct receiver tests on the ship station frequencies of the channels assigned to the associated public coast station.

(b) *Shore radar and radiolocation tests.* The following frequency bands are available for assignment to demonstrate radar and radiolocation equipment. The use of frequencies within these bands must not cause harmful interference to the radionavigation service and the Government radiolocation service: 2450-2500 MHz, 2900-3100 MHz, 5460-5650 MHz, 9300-9500 MHz, 14.0-14.05 GHz.

DEVELOPMENTAL STATIONS

§ 80.391 Frequencies for developmental stations.

(a) Ship and shore stations engaged in developmental operations may be assigned any frequency or frequencies assignable to the service and class of station they propose to operate. The following frequency bands are also assignable to ships and coast stations for developmental operations:

Ship transmit	Coast transmit
5350–5460 MHz [1]	5350–5460 MHz [1]
6425–6525 MHz	
9000–9200 MHz [1]	9000–9200 MHz [1]
11700–12200 MHz	11700–12200 MHz
17700–19700 MHz	
27500–29500 MHz	

[1] The bands 5350–5460 MHz and 9000–9200 MHz are assignable for developmental operations at ship and shore radiolocation stations if their operations do not cause harmful interference to aeronautical radionavigation or Government radiolocation services.

(b) Stations authorized to conduct developmental operations are prohibited from communicating with any station of a country other than the United States.

(c) Stations authorized to conduct developmental operations must not cause harmful interference to the operation of stations authorized in other public services nor to any United States Government or foreign station.

Subpart I—Station Documents

§ 80.401 Station documents requirement.

Licensees of radio stations are required to have current station documents as indicated in the following table.

LEGEND

R = REQUIRED

DOCUMENTS →

RADIO STATION CATEGORY	STATION LICENSE	APPROPRIATE OPERATOR AUTHORIZATION	STATION LOGS	APPROPRIATE SAFETY CONVENTION CERTIFICATE	COMMUNICATIONS ACT SAFETY CERTIFICATE	GREAT LAKES RADIO AGREEMENT SAFETY CERTIFICATE	BRIDGE-TO-BRIDGE ACT SAFETY CERTIFICATE	PART 80; FCC RULES AND REGULATIONS	ALPHABETICAL LIST OF MARITIME MOBILE CALL SIGNS	LIST OF SHIP STATIONS	MANUAL FOR USE BY MARITIME MOBILE (M/M) SERVICE & M/M SATELLITE SERV.	LIST OF COAST STATIONS	LIST OF RADIODETERMINATION AND SPECIAL SERVICES STATIONS	STATION EQUIPMENT RECORDS
SHIPBOARD: TELEGRAPH; TITLE III, PART II / SAFETY CONVENTION	R1	R	R	R				R	R	R	R	R	R	
TELEPHONE; TITLE III, PART II / SAFETY CONVENTION	R1	R	R	R				R			R	R2		
TELEPHONE; TITLE III, PART II	R1	R	R					R						
TELEPHONE; TITLE III, PART III	R1	R	R		R			R						
TELEPHONE; GREAT LAKES RADIO AGREEMENT	R	R	R			R								
TELEPHONE; BRIDGE-TO-BRIDGE ACT	R	R	R				R							
RADAR	R													
ON-BOARD	R													R
VOLUNTARY	R	R												
LAND: PUBLIC COAST (MF)	R	R	R					R	R3	R3	R3			
PUBLIC COAST (HF)	R	R	R					R	R	R	R			
PUBLIC COAST (VHF)	R	R	R					R						
PRIVATE COAST	R	R												
RADIODETERMINATION	R	R												
OPERATIONAL FIXED	R	R												
MARITIME SUPPORT	R	R												
ALASKA - PUBLIC FIXED	R	R	R											
ALASKA - PRIVATE FIXED	R	R												
SHIP/COAST: MARINE UTILITY	R	R												

Notes:

1. The expired station license must be retained in the station records until the first Commission inspection after the expiration date.

2. Alternatively, a list of coast stations maintained by the licensee with which communications are likely to be conducted, showing watchkeeping hours, frequencies and charges, is authorized.

3. Required only if station provides a service to oceangoing vessels.

§ 80.403 Availability of documents.

Station documents must be readily available to the licensed operator(s) on duty during the hours of service of the station and to authorized Commission employees upon request.

§ 80.405 Station license.

(a) *Requirement.* Stations must have an authorization granted by the Federal Communications Commission.

(b) *Application.* Application for authorizations in the maritime services must be submitted on the prescribed forms in accordance with subpart B of this part.

(c) *Posting.* The current station authorization or a clearly legible copy must be posted at the principal control point of each station. If a copy is posted, it must indicate the location of the original. When the station license cannot be posted, as in the case of a marine utility station operating at temporary unspecified locations, it must be kept where it will be readily available for inspection. The licensee of a station on board a ship subject to Part II or III of Title III of the Communications Act or the Safety Convention must retain the most recently expired ship station license in the station records until the first Commission inspection after the expiration date.

§ 80.407 Operator authorization.

This section contains information and rules pertinent to the application for and posting of radio operator authorizations. Rules applicable to radio operator requirements are contained in subpart D of this part and other rules pertinent to commercial radio operators are contained in Part 13 of this chapter.

(a) *Application.* Detailed information about application forms, filing procedures, and places to file applications for radio operator authorizations is contained in the bulletin "Commercial Radio Operator Licenses and Permits." This bulletin is available from any Commission District Office or from the FCC, Washington, DC 20554.

(b) *Posting.* When a Commission-authorized operator is required, the original authorization of each operator must be posted at the principal control point of the station. In lieu of posting, an operator who holds a restricted radiotelephone operator permit or a higher class operator license may have the operator authorization or a photocopy thereof available for inspection upon request by authorized Commission employees when operating the following:

(1) A voluntary station;

(2) Any class of ship station when the operator is on board solely to service the radio equipment; or

(3) A portable station.

§ 80.409 Station logs.

(a) *General requirements.* Logs must be established and properly maintained as follows:

(1) The log must be kept in an orderly manner. The required information for the particular class or category of station must be readily available. Key letters or abbreviations may be used if their proper meaning or explanation is contained elsewhere in the same log.

(2) Erasures, obliterations or willful destruction within the retention period are prohibited. Corrections may be made only by the person originating the entry by striking out the error, initialing the correction and indicating the date of correction.

(3) Ship station logs must identify the vessel name, country of registry, and official number of the vessel.

(4) The station licensee and the radio operator in charge of the station are responsible for the maintenance of station logs.

(b) *Availability and retention.* Station logs must be made available to authorized Commission employees upon request and retained as follows:

(1) Logs must be retained by the licensee for a period of one year from the date of entry, and when applicable

for such additional periods as required by the following paragraphs:

(i) Logs relating to a distress situation or disaster must be retained for three years from the date of entry.

(ii) If the Commission has notified the licensee of an investigation, the related logs must be retained until the licensee is specifically authorized in writing to destroy them.

(iii) Logs relating to any claim or complaint of which the station licensee has notice must be retained until the claim or complaint has been satisfied or barred by statute limiting the time for filing suits upon such claims.

(2) Logs containing entries required by paragraphs (e) and (f) of this section must be kept at the principal radiotelephone operating location while the vessel is being navigated. All entries in their original form must be retained on board the vessel for at least 30 days from the date of entry.

(3) Ship radiotelegraph logs must be kept in the principal radiotelegraph operating room during the voyage.

(c) *Public coast station logs.* Public coast stations must maintain a log as follows:

(1) "ON DUTY" must be entered by the operator beginning a duty period, followed by the operator's signature. "OFF DUTY" must be entered by the operator being relieved of or terminating duty, followed by the operator's signature.

(2) The date and time of making an entry must be shown opposite the entry.

(3) Failure of equipment to operate as required and incidents tending to unduly delay communication must be entered.

(4) All measurements of the transmitter frequency(ies) must be entered with a statement of any corrective action taken.

(5) Entries must be made giving details of all work performed which may affect the proper operation of the station. The entry must be made, signed and dated by the operator who supervised or performed the work and, unless the operator is regularly employed on a full-time basis at the station, must also include the mailing address, class, serial number, and expiration date of the operator license.

(6) Entries must be made about the operation of the antenna tower lights when the radio station has an antenna structure requiring illumination by Part 17 of this chapter.

(7) All distress or safety related calls transmitted or received must be entered, together with the frequency used and the position of any vessel in need of assistance.

(8) Coast stations which maintain a watch on 500 kHz must enter the time this watch is begun, suspended or ended.

(d) *Ship radiotelegraph logs.* Logs of ship stations which are compulsorily equipped for radiotelegraphy and operating in the band 90 to 535 kHz must contain log entries as follows:

(1) The date and time of each occurrence or incident required to be entered in the log must be shown opposite the entry and the time must be expressed in Coordinated Universal Time (UTC).

(2) "ON WATCH" must be entered by the operator beginning a watch, followed by the operator's signature. "OFF WATCH" must be entered by the operator being relieved or terminating a watch, followed by the operator's signature. All log entries must be completed by the end of each watch.

(3) During the watch, all calls and replies to and from the station must be entered to include the time, frequencies, and call letters of the station communicated with or heard. Also, any messages exchanged must be entered to include the time, frequency, and call letters of the station(s) communicated with or heard.

(4) During the watch, an entry must be made twice per hour stating whether the international silence period was observed. Entries must also be made indicating any signals or communications heard on 500 kilohertz during this period. If no signals are heard on 500 kHz, an entry to that effect must be made.

(5) The time and reason for discontinuance and the time of resuming the watch must be entered when the 500 kHz watch is discontinued.

(6) All distress calls, automatic-alarm signals, urgency and safety signals made or intercepted, the complete text, if possible, or distress messages

and distress communications, and any incidents or occurrences which may appear to be of importance to safety of life or property at sea, must be entered, together with the time of such observation or occurrence and the position of the ship or other mobile unit in need of assistance.

(7) The position of the ship at least once per day.

(8) A daily entry must be made comparing the radio station clock with standard time, including errors observed and corrections made. For this purpose, authentic radio time signals received from land or fixed stations will be acceptable as standard time.

(9) All test transmissions must be entered, including the time of the transmissions and the approximate geographical location of the vessel.

(10) Any failure of equipment to operate as required and any incidents tending to unduly delay communications must be entered.

(11) A ship required to keep a radiotelegraph watch on 500 kHz must meet the following:

(i) Entries must be made of the results of tests of the emergency installation including transmitter antenna current, hydrometer readings of lead-acid storage batteries, voltage readings of other types of batteries, and quantity of fuel available for engine generators.

(ii) When the vessel is in the open sea, a log entry must be made each time the emergency power supply is used to carry on a communication other than during a safety watch.

(iii) When the vessel is in the open sea, a daily entry must be made showing whether the storage batteries were brought up to the normal full charge condition that day.

(iv) Entries must be made stating when each storage battery is placed on charge or off charge.

(v) Entries must be made about maintenance of survival craft radio equipment, including a record of charging of any storage batteries supplying power to such equipment. The record of charging must show when such storage battery is placed on charge and when it is taken off charge.

(vi) Results of inspections and tests of survival craft radio equipment, prior to departure of the vessel from a harbor or port and weekly inspections, must be entered.

(vii) On a cargo vessel equipped with an auto alarm, the entry "AUTO ALARM ON" and the entry "AUTO ALARM OFF", respectively, must be made whenever the operator places the auto alarm in and out of operation. Results of the required auto alarm tests must be entered daily, including the minimum number of 4-second dashes from the testing device which were necessary to properly operate the alarm.

(viii) On a cargo vessel equipped with an auto alarm, a log entry must be made whenever the auto alarm becomes inoperative. The entry must include a statement showing the time the operator was called to make repairs; the reason for the failure; parts changed; repairs; and the time the auto alarm was restored to service.

(e) *Ship radiotelephone logs.* Logs of ship stations which are compulsorily equipped for radiotelephony must contain the following applicable log entries and the time of their occurrence:

(1) A summary of all distress, urgency and safety traffic;

(2) A summary of communications conducted on other than VHF frequencies between the ship station and land or mobile stations;

(3) A reference to important service incidents;

(4) The position of the ship at least once a day;

(5) The name of the operator at the beginning and end of the watch period;

(6) The time the watch begins when the vessel leaves port, and the time it ends when the ship reaches port;

(7) The time the watch is discontinued, including the reason, and the time the watch is resumed;

(8) The times when storage batteries provided as a part of the required radiotelephone installation are placed on charge and taken off charge;

(9) Results of required equipment tests, including specific gravity of lead-acid storage batteries and voltage reading of other types of batteries pro-

vided as a part of the compulsory installation;

(10) Results of inspections and tests of compulsorily fitted lifeboat radio equipment;

(11) A daily statement about the condition of the required radiotelephone equipment, as determined by either normal communication or test communication;

(12) When the master is notified about improperly operating radiotelephone equipment.

(f) *Applicable radiotelephone log entries.* The log entries listed in paragraph (e) of this section are applicable as follows:

(1) Radiotelephony stations subject to parts II and III of title III of the Communications Act and/or the Safety Convention must record entries indicated by paragraphs (e)(1) through (e)(11) of this section.

(2) Radiotelephony stations subject to the Great Lakes Radio Agreement must record entries indicated by paragraphs (e) (1), (5), (8), (9), (11) and (12) of this section.

(3) Radiotelephony stations subject to the Bridge-to-Bridge Act must record entries indicated by paragraphs (e) (1), (5), (6), (7), (11) and (12) of this section.

[51 FR 31213, Sept. 2, 1986, as amended at 52 FR 35245, Sept. 18, 1987; 54 FR 40059, Sept. 29, 1989]

§ 80.411 Vessel certification or exemption.

(a) *Application.* The application procedures for inspection and certification and for exemptions are contained in § 80.59.

(b) *Posting.* Communications Act, Safety Convention and Great Lakes Radio Agreement certificates or exemptions must be posted in a prominent, accessible place in the ship.

§ 80.413 On-board station equipment records.

(a) The licensee of an on-board station must keep equipment records which show:

(1) The ship name and identification of the on-board station;

(2) The number and type of repeater and mobile units used on-board the vessel; and

(3) The date and type of equipment which is added or removed from the on-board station.

§ 80.415 ITU publications.

(a) The following publications listed in the table contained in § 80.401 are published by the International Telecommunications Union (ITU):

(1) Manual for Use of the Maritime Mobile and Maritime Mobile-Satellite Services.

(2) List IV—List of Coast Stations.

(3) List V—List of Ship Stations.

(4) List VI—List of Radiodetermination and Special Services Stations.

(5) List VII A—Alphabetical List of Call Signs of Stations Used by the Maritime Mobile Service, Ship Station Selective Call Numbers or Signals and Coast Station Identification Numbers or Signals.

(b) The publications listed in paragraph (a) of this section may be purchased from:

International Telecommunication Union
General Secretariat—Sales Section, Place des Nations, CH-1211 Geneva 20, Switzerland

§ 80.417 FCC Rules and Regulations.

The Commission's printed publications are described in subpart C of part 0 of this chapter. These publications may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. The Commission does no furnish copies of these publication but will furnish a price list, Information Services and Publications-Bulletin No. 1, upon request. Requests fo copies of this list should be directed t the Office of Congressional and Publi Affairs, Federal Communication Commission, Washington, DC 20554.

STATIONS ON LAND

Subpart J—Public Coast Stations

§ 80.451 Supplemental eligibility requir ments.

A public coast station license may b granted to any person meeting th citizenship provisions of § 80.15(b).

§ 80.453 Scope of communications.

Public coast stations provide ship/shore radiotelephone and radiotelegraph services.

(a) Public coast stations are authorized to communicate:

(1) With any ship or aircraft station operating in the maritime mobile service, for the transmission or reception of safety communication;

(2) With any land station to exchange safety communications to or from a ship or aircraft station;

(3) With Government and non-Government ship and aircraft stations to exchange public correspondence;

(b) Public coast stations are authorized to communicate with a designated station at a remote fixed location where other communication facilities are not available.

(c) Public coast stations are authorized to transmit meteorological and navigational information of benefit to mariners.

(d) Each public coast telegraphy station is authorized to communicate with other public coast telegraphy stations to exchange message traffic destined to or originated at mobile stations:

(1) To exchange operating signals, brief service messages or safety communication;

(2) To exchange message traffic destined for a mobile station when the coast station initially concerned is unable to communicate directly with the mobile station;

(3) In the Great Lakes region, to exchange message traffic originated at a mobile station when the use of available point-to-point communication facilities would delay the delivery of such message traffic;

(4) Utilization of radiotelegraphy must not incur additional charges or replace available point-to-point communication facilities;

(5) Only authorized working frequencies within the band 415 kHz to 5000 kHz must be employed for communications between coast stations;

(6) Harmful interference must not be caused to communication between mobile stations and coast stations or between mobile stations.

USE OF TELEGRAPHY

§ 80.455 Assignment and use of frequencies for manual Morse code telegraphy.

(a) The frequencies designated in §§ 80.355 and 80.357 may be licensed for use by coast stations employing telegraphy.

§ 80.459 Digital selective calling.

Subpart H of this part lists frequencies assignable for DSC.

§ 80.461 Narrow-band direct-printing.

Subpart H of this part lists the frequencies assignable to public coast stations for operations with ship stations. Operating procedures are listed in subpart C of this part.

USE OF TELEPHONY

§ 80.465 Assignment and use of frequencies for telephony.

Subpart H of this part lists the frequencies available for assignment to public coast stations for telephony operations.

§ 80.467 Duplication of VHF service.

No duplication of service areas as determined by subpart P of this part will be permitted by public coast stations operating on the same VHF public correspondence channel. Within the service area of a station, the ratio of desired to undesired co-channel signal strengths on public correspondence channels must be at least 12dB.

§ 80.469 Maritime mobile repeater stations in Alaska.

(a) Maritime mobile repeater stations are authorized to extend the range of communication between a VHF public coast station located in Alaska and ship stations.

(b) On a secondary basis, maritime mobile repeater stations may be authorized to extend the range of a private coast station:

(1) In an area where VHF common carrier service is not available;

(2) A maritime mobile repeater station license expires 60 days after a public coast station in the area begins service.

(c) Each application for a maritime mobile repeater station must include a statement showing why operational fixed frequencies cannot be employed.

(d) The provisions relating to duplication of service described in subpart P apply to maritime mobile repeater stations.

(e) The frequencies 157.275 and 161.875 MHz are assignable to maritime mobile repeater stations.

(f) Each maritime mobile repeater station must:

(1) Deactivate automatically within 5 seconds after the signals controlling the station cease; and

(2) During periods when it is not controlled from a manned control point, deactivate automatically not more than 20 minutes after its activation by a mobile unit.

§ 80.471 Discontinuance or impairment of service.

A public coast station must not discontinue or impair service unless authorized to do so by the Commission.

[51 FR 31213, Sept. 2, 1986; 52 FR 35245, Sept. 18, 1987]

AUTOMATED SYSTEMS

§ 80.475 Scope of service of the Automated Maritime Telecommunications System (AMTS).

(a) An AMTS may serve the upper and/or lower sectors of the Mississippi River, its connecting waterways, the Gulf Intracoastal Waterway, and the offshore waters of the Gulf of Mexico. An AMTS serving the eastern or western sector of the offshore waters of the Gulf of Mexico, that is, East or West of longitude 87°45′ W, must provide service to the 100 fathom line or 40 nautical miles offshore, whichever is greater.

(b) AMTS applicants must show how the proposed system will provide continuity of service along more than 60% of each of one or more navigable waterways encompassing the Mississippi River System, the Gulf Intracoastal Waterway, or the eastern or western sector of the offshore waters of the Gulf of Mexico. Waterways less than 240 kilometers (150 miles) long must be served in their entirety. A separate Form 503 is not required for each coast station in a system. However, the applicant must provide technical characteristics for each proposed coast station, including transmitter type, operating frequencies, emissions, transmitter output power, antenna arrangement and location.

(1) Applicants proposing to locate a coast station transmitter within 169 kilometers (105 miles) of a channel 13 television station or within 129 kilometers (80 miles) of a channel 10 television station or with an antenna height greater than 61 meters (200 feet) must submit an engineering study clearly showing the means of avoiding interference with television reception within the grade B contour. See § 80.215(h).

(2) Additionally, applicants required to submit the above specified must give written notice of the filing of such application(s) to the television stations which may be affected. A list of the notified television stations must be submitted with the subject applications.

(c) In lieu of public correspondence service an AMTS system may provide private coast station communications related to the operational requirements of ships including transmissions of fuel, weather, position and supply reports. However, such communications may be provided only to ship stations whose licensees make cooperative arrangements with the AMTS coast station licensees. In emergency and distress situations, services must be provided without prior arrangements.

[51 FR 31213, Sept. 2, 1986, as amended at 52 FR 35245, Sept. 18, 1987]

§ 80.477 Points of communications.

(a) AMTS coast stations may communicate with fixed platform stations located in the offshore waters of the Gulf of Mexico and with ship stations.

(b) AMTS licensees in the offshore waters of the Gulf of Mexico may use AMTS coast and ship station frequencies on a secondary basis for fixed service communications to support offshore AMTS operations.

(c) AMTS service may be provided to any vessel within communication service range of an AMTS station even though the vessel may not be operating within the confines of a served waterway.

[51 FR 31213, Sept. 2, 1986, as amended at 52 FR 35245, Sept. 18, 1987]

§ 80.479 Assignment and use of frequencies for AMTS.

(a) The frequencies assignable to AMTS stations are listed in subpart H of this part. These frequencies are assignable to ship and public coast stations for voice, facsimile and radioteletypewriter communications.

Subpart K—Private Coast Stations and Marine Utility Stations

§ 80.501 Supplemental eligibility requirements.

(a) A private coast station or a marine utility station may be granted only to a person who is:

(1) Regularly engaged in the operation, docking, direction, construction, repair, servicing or management of one or more commercial transport vessels or United States, state or local government vessels; or is

(2) Responsible for the operation, control, maintenance or development of a harbor, port or waterway used by commercial transport vessels; or is

(3) Engaged in furnishing a ship arrival and departure service, and will employ the station only for the purpose of obtaining the information essential to that service; or is

(4) A corporation proposing to furnish a nonprofit radio communication service to its parent corporation, to another subsidiary of the same parent, or to its own subsidiary where the party to be served performs any of the eligibility activities described in this section; or is

(5) A nonprofit corporation or association, organized to furnish a maritime mobile service solely to persons who operate one or more commercial transport vessels; or is

(6) Responsible for the operation of bridges, structures or other installations that area part of, or directly related to, a harbor, port or waterway when the operation of such facilities requires radio communications with vessels for safety or navigation; or is

(7) A person controlling public moorage facilities; or is

(8) A person servicing or supplying vessels other than commercial transport vessels; or is

(9) An organized yacht club with moorage facilities; or is

(10) A nonprofit organization providing noncommercial communications to vessels other than commercial transport vessels.

(b) Each application for station authorization for a private coast station or a marine utility station must be accompanied by a statement indicating eligibility under paragraph (a) of this section.

§ 80.503 Cooperative use of facilities.

(a) A person engaged in the operation of one or more commercial transport vessels or government vessels may receive maritime mobile service from a private coast station or a marine utility station on shore even though not the licensee of the private coast station or the marine utility station. Restrictions on cooperative arrangements are as follows:

(1) Foreign persons must be the licensees of the radio stations installed on board their vessels.

(2) The licensee of a private coast station or marine utility station on shore may install ship radio stations on board United States commercial transport vessels of other persons. In each case these persons must enter into a written agreement verifying that the ship station licensee has the sole right of control of the ship stations, that the vessel operators must use the ship stations subject to the orders and instructions of the coast station or marine utility station on shore, and that the ship station licensee will have sufficient control of the ship station to enable it to carry out its responsibilities under the ship station license.

(b) Cooperative arrangements are limited concerning cost and charges as follows:

(1) The arrangement must be established on a non-profit, cost-sharing basis by written contract. A copy of the contract must be kept with the station records and made available for

inspection by Commission representatives.

(2) Contributions to capital and operating expenses are to be prorated on an equitable basis among all persons who are parties to the cooperative arrangement. Records which reflect the cost of the service and its nonprofit, cost-sharing nature must be maintained by the licensee of the station and made available for inspection by Commission representatives.

§ 80.505 Points of communication.

(a) Private coast stations and marine utility stations are authorized to communicate:

(1) With any mobile station in the maritime mobile service for the exchange of safety communications;

(2) With any land station for the purpose of aiding the exchange of safety communications;

(3) With ship stations.

(b) Private coast stations of the same licensee may be authorized to communicate on a secondary basis between themselves if:

(1) The communications are confined exclusively to those for which authority has been granted the coast station, and concerns ships with which one or both of the coast stations are authorized to communicate; and

(2) Other satisfactory point-to-point communication facilities between the coast stations are unavailable; and

(3) Coast stations which communicate with each other are not more than 160 km (100 miles) apart; and

(4) Harmful interference is not cause to mobile stations.

(c) A private coast station and associated marine utility stations serving and located on a shipyard regularly engaged in construction or repair of commercial transport vessels or Government vessels are authorize to communicate between stations when they are licensed to the same entity and communications are limited to serving the needs of ships on a non-interference basis to other stations in the maritime mobile service. A separate showing is required.

§ 80.507 Scope of service.

(a) A private coast station or marine utility station using telephony serves the operational and business needs
ships including the transmission
safety communication.

(b) In areas where environment
communications are provided by U.
Government stations or by publ
coast stations, private coast statio
and marine utility stations on sho
must not duplicate that service.
other areas, private coast stations a
marine utility stations on shore m
transmit weather and hydrograph
information required for the shi
with which they normally commu
cate. Private coast stations may p
vide environmental communicati
service in areas where adequate servi
is not available.

(c) Each marine utility station
shore must be operated as a priva
coast station except that it may be
erated at temporary unspecified lo
tions. Marine utility stations on shi
are operated as ship stations.

§ 80.509 Frequency assignment.

Frequencies assignable to priva
coast stations and marine utility s
tions are listed in subpart H.

§ 80.511 Assignment limitations.

(a) Only one port operation,
commercial and one non-commerci
frequency will be assigned to a priva
coast station or marine utility stati
Applications for authority to use m
than one frequency in any one of
above three categories must includ
showing of need as specified below.

(b) An application for an additio
frequency by a person who servi
vessels, must include a description
the vessels with which communicati
is planned and a statement that
applicant has personal knowledge th
the ship radio stations are not capa
of operating on working frequenc
already assigned to the coast station

(c) An application for an additio
frequency based on congestion of
assigned frequency must show that
any four periods of 5 consecutive d
each, in the preceeding 6 months,
assigned frequency was in use at le
25 percent of the time during 3 ho
of daily peak activity. If the appli
tion for an additional frequency
based on the congestion by oth

nearby stations, the showing must include the call signs and locations of such stations.

§ 80.513 Frequency coordination.

(a) Except as provided in paragraphs (b) and (c) of this section each application for a new VHF private coast station license or modification of an existing license to be located in an area having a recognized frequency coordinating committee must be accompanied by:

(1) A report based on a field study, indicating the degree of probable interference to existing stations operating in the same area. The applicant must consider all stations operating on the working frequency or frequencies requested or assigned within 80 km (50 miles) of the proposed station location, and

(2) The report must include a statement that all existing licensees on the frequency within 80 km (50 miles) and the frequency coordinating committee have been notified of the applicant's intention to file an application. The notice of intention to file must provide the licensees concerned and the advisory committee with the following information: The frequency and emission; transmitter location and power; and the antenna height proposed by the applicant.

(b) Applications for modification need not be accompanied by the field study where the modification does not involve any change in frequency(ies), power, emission, antenna height, antenna location or area of operation.

(c)(1) In lieu of the field study, a statement from a frequency coordinating committee may be submitted with the application. The committee must comment on the requested frequency or the proposed changes in the authorized station and give an opinion regarding the probable interference to existing stations. The committee must consider all stations operating on the requested frequency within 80 km (50 miles) of the proposed station location. The frequency coordinating committee statement must also recommend a frequency which will result in the least amount of interference to proposed and existing stations. Committee recommendations may also include comments on technical factors and may recommend restrictions to minimize interference.

(2) A frequency coordinating committee must be representative of all persons who are eligible for VHF private coast stations within the service area of the recognized frequency coordinating committee. A statement of organization, service area and composition of the committee must be submitted to the Commission for approval. The functions of any coordinating committee are purely advisory to the applicant and the Commission. Its recommendations are not binding upon either the applicant or the Commission.

§ 80.514 Marine VHF frequency coordinating committee(s).

This section contains the names of organizations that have been recognized by the Commission to serve as marine VHF frequency coordinating committees for their respective areas. Write or call FCC; Private Radio Bureau Licensing Division; Consumer Assistance Branch; Gettysburg, PA, 17326; Phone: (717) 337-1212; for frequency advisory committee mailing address information.

(a) The Southern California Marine Radio Council serves the California counties of Santa Barbara, Kern, San Bernardino, Ventura, Los Angeles, Orange, Riverside, San Diego, Imperial and the Channel Islands.

[52 FR 35246, Sept. 18, 1987]

§ 80.515 Limitations on use.

A private coast station or marine utility station using telephony must:

(a) Not be used for public correspondence;

(b) Not be used to transmit program material for radio broadcasting; and

(c) Not be used to transmit press material or news items which are not required to serve the needs of ships.

§ 80.517 Time limitation on communication.

All communication engaged in by private coast stations and marine utility stations must be limited to the minimum practicable transmission time. Each station licensee must employ standardized operating practices and procedures.

§ 80.519 Station identification.

(a) Stations must identify transmissions by announcing in the English language the station's assigned call sign. In lieu of the identification of the station by voice, the official call sign may be transmitted by tone-modulated telegraphy in international Morse Code manually or by means of an automatic device approved by the Commission. Transmissions on the navigation frequency (156.650 MHz) by stations on drawbridges may be identified by use of the name of the bridge in lieu of the call sign. Identification must be made:

(1) At the beginning and end of each exchange of communications and;

(2) At intervals not exceeding 15 minutes whenever transmissions or communications are sustained for more than 15 minutes.

(b) Marine utility stations or private coast stations when exchanging communications with marine utility stations may be identified by a unit identifier in lieu of the call sign. Identification by transmission of the assigned call sign must be at the end of the exchange of communications or at least once each 15 minutes.

Subpart L—Operational Fixed Stations

§ 80.551 Applicability.

This subpart contains rules applicable to operational fixed stations.

§ 80.553 Supplemental eligibility requirements.

An applicant for an operational fixed station must show that:

(a) The applicant is the licensee of a coast station;

(b) Other suitable telecommunications facilities are not available to satisfy coast station requirements.

§ 80.555 Scope of communication.

An operational fixed station provides control, repeater or relay functions for its associated coast station.

§ 80.557 Assignment and use of frequencies.

The specific frequencies for these stations are listed in subpart H of this part.

§ 80.559 Licensing limitations.

Operational fixed stations are subject to the following licensing limitations:

(a) A maximum of four frequencies will be assigned.

(b) Stations will not be authorized when applications indicate less than 16 km (10 miles) separation between a proposed station and a TV transmitter operating on either Channel 4 or 5, or from the post office of a community in which either channel is assigned but not in operation.

(c) Stations located between 16 km (10 miles) and 128 km (80 miles) of a TV transmitter operating on either Channel 4 or 5, or from the post office of a community in which either channel is assigned but not in operation, are secondary to TV operations within the Grade B service contour.[1]

[51 FR 31213, Sept. 2, 1986; 51 FR 34984, Oct. 1, 1986; as amended at 54 FR 40059, Sept. 29, 1989]

Subpart M—Stations in the Radiodetermination Service

§ 80.661 Scope of communications.

Stations on land in the Maritime Radiodetermination Service provide a radionavigation or radiolocation service for ships.

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[1] OET Bulletin No. 67, March 1988, entitled "Potential Interference from Operational Fixed Stations in the 72-76 MHz Band to Television Channels 4 and 5" describes an analytical model that can be used to calculate the potential interference that might result from a given fixed station operation. Copies of the bulletin may be obtained from the Commission's current duplication contractor. Information concerning the current duplication contractor may be obtained from the Office of Public Affairs Consumer Assistance and Small Business Division, Telephone (202) 632-7000.

§ 80.603 Assignment and use of frequencies.

The frequencies available for assignment to shore radionavigation/radiolocation stations are contained in subpart H of this part.

§ 80.605 U.S. Coast Guard coordination.

(a) Radionavigation coast stations operated to provide information to aid in the movement of any ship are private aids to navigation. Before submitting an application for an radionavigation station, an applicant must obtain written permission from the cognizant Coast Guard District Commander at the area in which the device will be located. Documentation of the Coast Guard approval must be submitted with the application.

NOTE: Surveillance radar coast stations do not require U.S. Coast Guard approval.

(b) Applications for type acceptance of coast and ship station transponders must include a description of the technical characteristics of the equipment including the scheme of interrogation and the characteristics of the transponder response. When a type acceptance application in submitted to the Commission a copy of such application must be submitted concurrently to: Commandant (G-TTS-3), U.S. Coast Guard, Washington, DC 20593.

(c) Prior to submitting an application for a non-selectable transponder coast station license in the 2920-3100 MHz or 9320-9500 MHz band the applicant must submit a letter requesting written approval of the proposed station to the cognizant Coast Guard District Commander of the area in which the device will be located. The letter must include:

(1) The necessity for the station;

(2) The latitude and longitude of its position;

(3) The transponder antenna height above sea level;

(4) The antenna azimuth response (angle of directivity);

(5) The manufacturer and model number of the transponder;

(6) The identifying Morse character for transponders used as racons;

(7) The name and address of the person responsible for the operation and maintenance of the station;

(8) The time and date during which it is proposed to operate the station; and

(9) The maximum station e.i.r.p. if it would exceed 5 watts.

A copy of the request and the U.S. Coast Guard approval must be submitted to the Commission with the station license application.

(d) Prior to submitting an application for a non-selectable transponder ship station license in the 2920-3100 MHz or 9320-9500 MHz band the applicant must submit a letter requesting approval of the proposed station to: Commandant (G-NSR), U.S. Coast Guard, Washington, DC 20593. The letter must include the name, address and telephone number of a person or a point of contact responsible for the operation of the device, the specific need for the station, the name of the associated ship, the area in which the transponder will be used, and the hours of operation. A copy of the request and the U.S. Coast Guard approval must be submitted to the Commission with the station license application.

[52 FR 7419, Mar. 11, 1987]

Subpart N—Maritime Support Stations

§ 80.651 Supplemental eligibility requirements.

(a) An applicant for a maritime support station must demonstrate a requirement for training personnel associated with the maritime service or for the testing, demonstration or maintenance of ship or coast radio equipment.

§ 80.653 Scope of communications.

(a) Maritime support stations are land stations authorized to operate at permanent locations or temporary unspecified locations.

(b) Maritime support stations are authorized to conduct the following operations:

(1) Training of personnel in maritime telecommunications;

(2) Transmissions necessary for the test and maintenance of maritime radio equipment at repair shops; and

(3) Transmissions necessary to test the technical performance of the licensee's public coast station(s) radiotelephone receiver(s); and

(4) Transmissions necessary for radar/racon equipment demonstration.

§ 80.655 Use of frequencies.

(a) The frequencies available for assignment to maritime support stations are described or listed in:

(1) Section 80.373 for scope of communications described in § 80.653(b)(1);

(2) Sections 80.373 and 80.385 for scope of communications described in § 80.653(b)(2); and

(3) Section 80.389 for scope of communications described in § 80.653 (b)(3) and (4).

(b) Frequencies must be used only on a secondary, non-interference basis to operational maritime communications.

(c) Use of frequencies assigned to services other than the maritime radiolocation service is limited to one hour per twenty four hour period.

[51 FR 31213, Sept. 2, 1986, as amended at 52 FR 35245, Sept. 18, 1987]

§ 80.659 Technical requirements.

The authorized frequency tolerance, class of emission, bandwidth, and transmitter power for maritime support stations are contained in subpart E of this part under the category associated with the intended use except for power limitations imposed upon stations operating within the scope of § 80.653(b)(3), which are further limited by the provisions of § 80.215(f).

Subpart O—Alaska Fixed Stations

§ 80.701 Scope of service.

There are two classes of Alaska Fixed stations. Alaska-public fixed stations are common carriers, open to public correspondence, which operate on the paired duplex channels listed in subpart H of this part. Alaska-private fixed stations may operate on simplex frequencies listed in subpart H of this part to communicate with other Alaska private fixed stations or with ship stations, and on duplex frequencies listed in subpart H of this par when communicating with the Alaska public fixed stations. Alaska-privat fixed stations must not charge fo service, although third party traffi may be transmitted. Only Alaska public fixed stations are authorized t charge for communication services.

§ 80.703 Priority of distress and other si nals.

Alaska-public fixed stations, whe operating on an authorized carrier fre quency which is also used by the mar time mobile service, must give priorit to distress, urgency or safety signal or to any communication preceded b one of these signals.

§ 80.705 Hours of service of Alaska-publ fixed stations.

Each Alaska-public fixed statio whose hours of service are not conti uous must not suspend operatio before having concluded all commun cations of an emergency nature.

§ 80.707 Cooperative use of frequency signments.

(a) Only one Alaska-public fixed st tion will be authorized to serve a area whose point-to-point communic tion needs can be adequately served a single radio communication facility

(b) Each radio channel authoriz for use by an Alaska-private fixed st tion is available on a shared basis onl All station licensees must cooperate the use of their respective frequen assignments to minimize interference

§ 80.709 Frequencies available.

Frequencies assignable to Alas fixed stations are listed in subpart of this part.

§ 80.711 Use of U.S. Government freque cies.

Alaska-public fixed stations may authorized to use frequencies assign to U.S. Government radio stations communications with Government st tions or for coordination of Gover ment activities.

Subpart P—Standards for Computing Public Coast Station VHF Coverage

§ 80.751 Scope.

This subpart specifies receiver antenna terminal requirements in terms of power, and relates the power available at the receiver antenna terminals to transmitter power and antenna height and gain.

§ 80.753 Signal strength requirements at the service area contour.

(a) The requirements for reception by a marine VHF shipboard receiver are satisfied if the field strength from the coast station, calculated in accordance with § 80.771 is at least +17 dBu above one microvolt.

(b) These field strengths, voltages and powers at the receiver input are equivalent:

(1) −132 dBW (decibels referred to 1 watt).

(2) 1.8 microvolts across 50 ohms.

(3) +17 dBu (decibels referred to 1 microvolt per meter).

(4) 7 microvolts per meter.

§ 80.755 Applicability.

Applications for maritime frequencies in the 156-162 MHz band must include a map showing the proposed service area contour. The service area contour must be computed in accordance with the following procedures.

§ 80.757 Topographical data.

(a) In the preparation of profile graphs and in determining the location and height above sea level of the antenna site, the elevations or contour intervals must be taken from U.S. Geological Survey topographic quadrangle maps, U.S. Army Corps of Engineers maps or Tennessee Valley Authority maps, whichever is the latest, for all areas for which maps are available. If such maps are not published for the area in question, the next best topographic information must be used. The maps used must include the principal area to be served. U.S. Geological Survey topographic quadrangle maps may be obtained from the Eastern Distribution Branch, U.S. Geological Survey, 1200 South Eads Street, Arlington, VA 22202, for maps of areas east of the Mississippi River, including Minnesota, Puerto Rico, and the Virgin Islands, and from the Western Distribution Branch, U.S. Geological Survey, Federal Center, Denver CO 80225, for maps of areas west of the Mississippi River, including Alaska, Hawaii, Louisiana, Guam and American Samoa. Sectional aeronautical charts are available from the Distribution Division, National Ocean Service, Riverdale, MD 20840.

(b) In lieu of maps, the average terrain elevation may be computer generated, using elevations from a 30 second point or better topographic data file such as those available for the U.S. Geological Survey's National Geographic Information Center or the National Oceanic and Atmospheric Administration's National Geophysical Data Center. In case of dispute maps will be used to determine the correct value.

§ 80.759 Average terrain elevation.

(a)(1) Draw radials from the antenna site for each 45 degrees of azimuth starting with true north. Any such radial which extends entirely over land from the antenna site to the point of +17 dBu field strength need not be drawn.

(2) If the distance from the antenna site to the point of +17 dBu field strength between any of the 45 degrees radials would be less than the distances calculated along these radials, an additional radial between such adjacent radials must be plotted and calculations made in each case. Each additional radial must be that radial along which it appears by inspection that transmission loss would be greatest.

(b) Draw a circle of 10 statute mile radius using the antenna site as the center. Divide each radial into 0.2 statute mile increments inside the circumference to the 2.0 statute mile point.

(c) Calculate the height above sea level of each 0.2 statute mile division by interpolating the contour intervals of the map, and record the value.

(d) Average the values by adding them and dividing by the number of readings along each radial.

(e) Calculate the height above average terrain by averaging the values calculated for each radial.

§ 80.761 Conversion graphs.

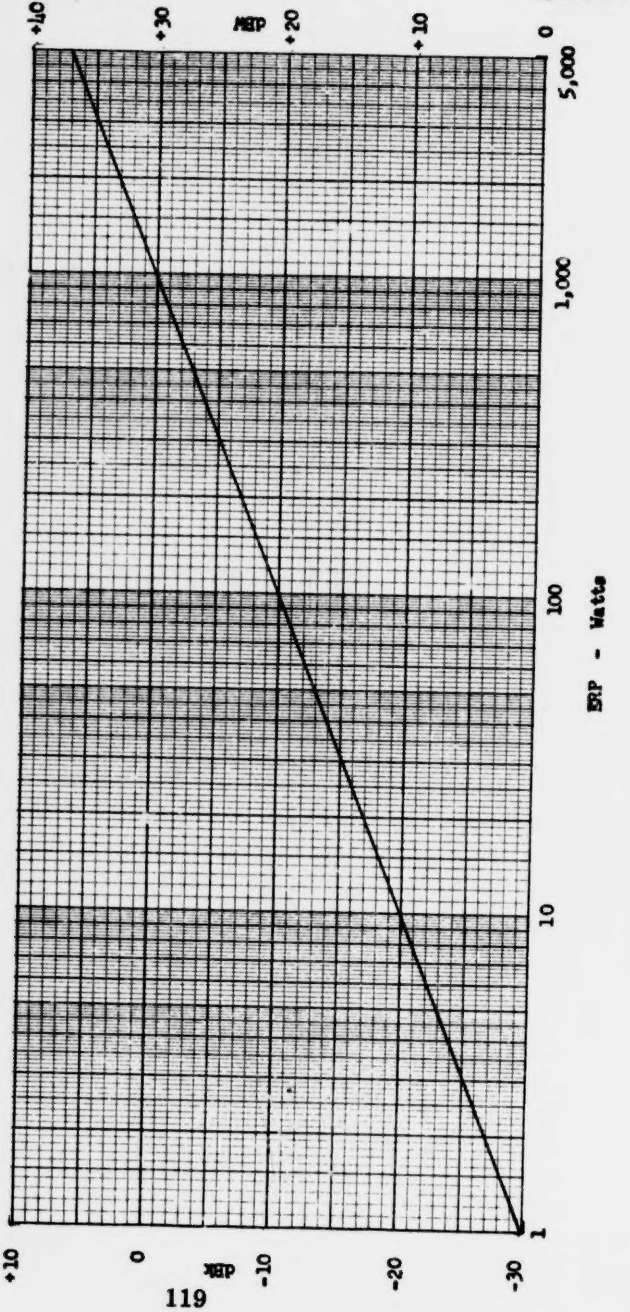
The following graphs must be employed where conversion from one to the other of the indicated types of units is required.

(a) *Graph 1.* To convert effective radiated power in watts to dBk or to dBW, find the power in watts on t horizontal axis. Move vertically alo the line representing the power to t diagonal line. Move horizontally fro the diagonal to the right side to re dBW and to the left to read dBk.

(b) *Graph 2.* To convert microvo across 50 ohms to received power dBW, find the signal in microvolts the horizontal axis. Move vertically the diagonal line, then move rig horizontally to read dBW.

EFFECTIVE RADIATED POWER (ERP)

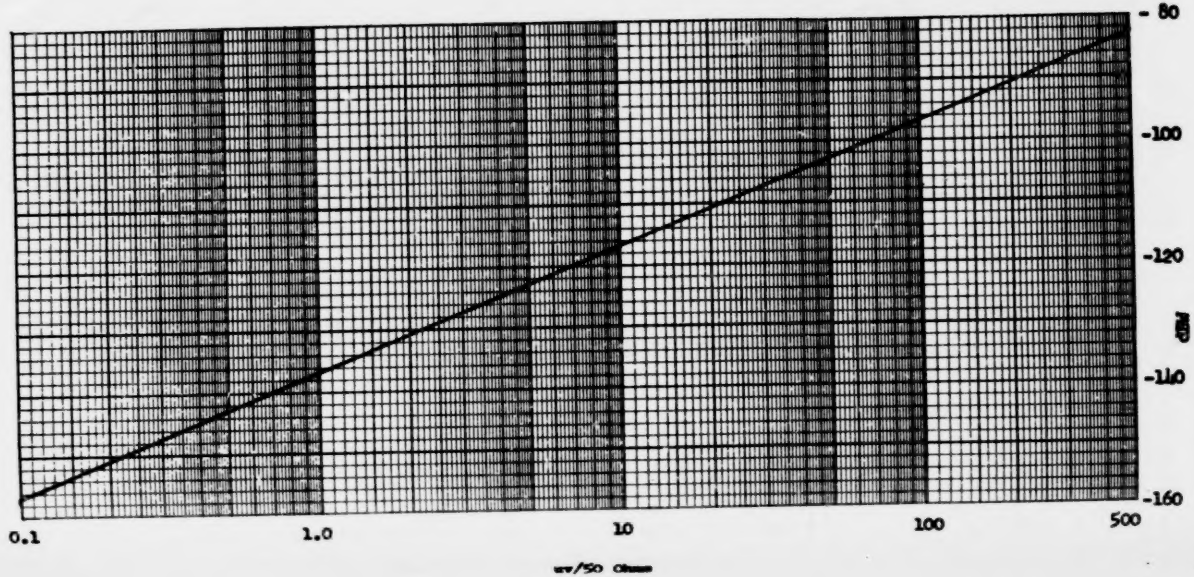
Translation: ERP to dBk 0 dBk = 1,000 Watts
ERP to dBW 0 dBW = 1 Watt



RECEIVED POWER

Translation: dBW to uv/50 Ohms
uv/50 Ohms to dBW

0 dBW = 1 Watt



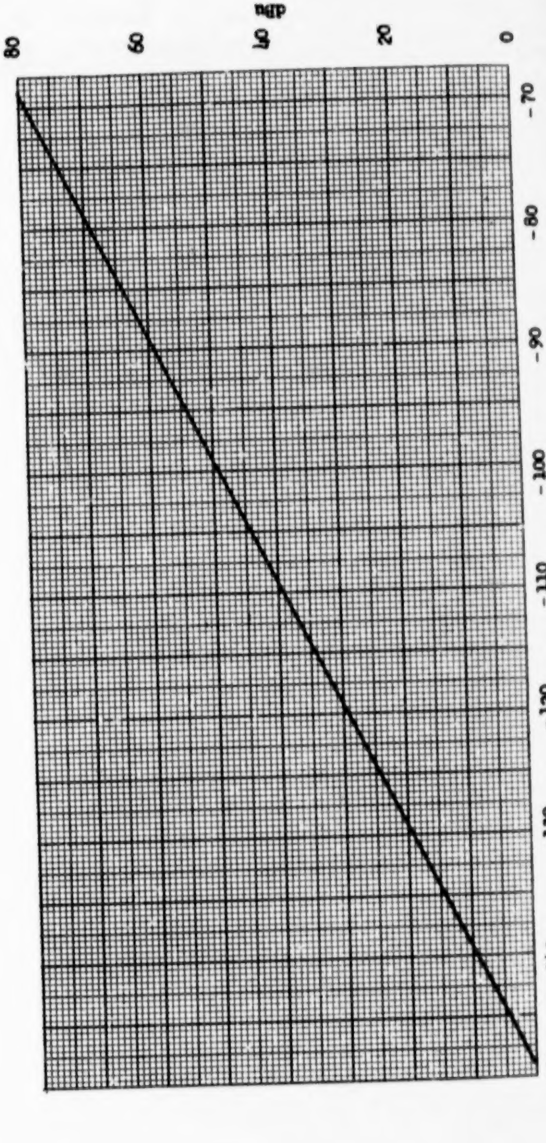
(c) *Graph 3.* To convert received power in dBW to field intensity in dBu find the received power in dBW on the horizontal axis. Move vertically to the diagonal line, then move right horizontally to read dBu.

FIELD INTENSITY VS RECEIVED POWER

For Half-Wave Dipole

Received Power in uv/50 Ohms

0 dBW = 1 Watt
0 dBu = 1 microvolt /meter



§ 80.763 Effective antenna height.

The effective height of the antenna is the vertical distance between the center of the radiating system above the mean sea level and the average terrain elevation.

§ 80.765 Effective radiated power.

Effective radiated power is used in computing the service area contour. The effective radiated power is derived from the transmitter output power, loss in the transmission system including duplexers, cavities, circulators, switches and filters, and the gain relative to a half-wave dipole of the antenna system.

§ 80.767 Propagation curve.

The propagation graph, § 80.767 Graph 1, must be used in computing the service area contour. The graph provides data for field strengths in dBu for an effective radiated power of 1 kW, over sea water, fresh water or land (smooth earth); transmitting antena heights of 4,800, 3,200, 1,600, 800, 400, 200, and 100 feet; based on a receiving antenna height of 9 meters (30 feet), for the 156-162 MHz band. The use of this is described in this section.

(a) Calculate the effective radiated power of the coast station, Ps in dB referred to 1 kW (dBk), as follows:

$$Ps = Pt + G - L$$

where,

Pt = Transmitter output power in dB referred to 1 kW: Transmitter output power in watts is converted to dBk by Pt = 10 [log10 (Power in watts)] − 30. Also see § 80.761 Graph 1 for a conversion graph.

G = Antenna gain in dB referred to a standard half-wave dipole, in the direction of each plotted radial, and

L = Line losses between the transmitter and the antenna, in dB.

NOTES:

1. To determine field strengths where the distance is known, for effective radiated powers other than 1kW (0 dBk): Enter the graph from the "statute miles" scale at the known distance, read up to intersection with the curve for the antenna height, read left to the "dBu for 1 kW radiated" scale and note the referenced field strength (Fe). The value of the actual field strength (F) in dBu will be F = Fe + Ps where Ps is the effective radiated power calculated above.

2. To determine distance, where the actual field strength is specified, for effective radiated powers other than 0 dBk: The value of the field referenced strength will be Fe = F − Ps in dBu. Enter the graph, from the "dBu for 1 kW radiated" scale at the corrected value of Fe, read right to intersection with the antenna height, read down to "statute miles" scale.

(b) Determine the antenna height. For antenna heights between the heights for which this graph is drawn, use linear interpolation; assume linear height-gain for antennas higher than 4,800 feet.

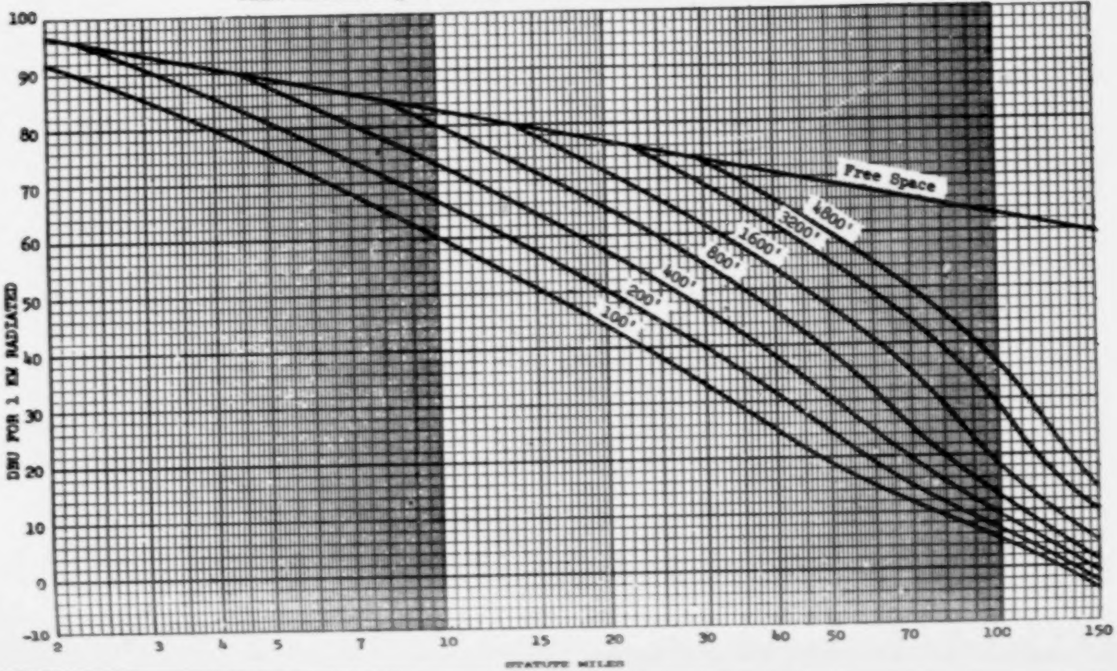
(c) For receiver antenna heights lower than 9 meters (30 feet), assume that the field strength is the same as at 9 meters (30 feet).

(d) Assume that propagation over fresh water or over land is the same as that over sea water.

PROPAGATION CURVES FOR THE VHF MARITIME MOBILE RADIO SERVICE
Seawater, Fresh Water Or Land (Smooth Earth)

Field Strengths, In dB From 1 Microvolt Per Meter (dBu), For An Effective
Radiated Power Of 1 KW.

Vessel Antenna Height = 30 Feet.
Coast Antenna Heights: 4800, 3200, 1600, 800, 400, 200 and 100 Feet.



§ 80.769 Shadow loss.

Where the transmission path is obstructed the received signal must be adjusted to include shadow loss. Attenuation due to shadowing must be taken from § 80.769 Graph 1, as follows:

(a) Inspect the map(s) to determine if a hill(s) obstructs an imaginary line of sight (dashed line on illustrative profiles of § 80.769 Graph 1 from the average terrain elevation at the coast station antenna to the water level at the ship location. If average terrain elevation exceeds the actual ground elevation at the antenna site, the latter elevation must be used as the average terrain elevation.

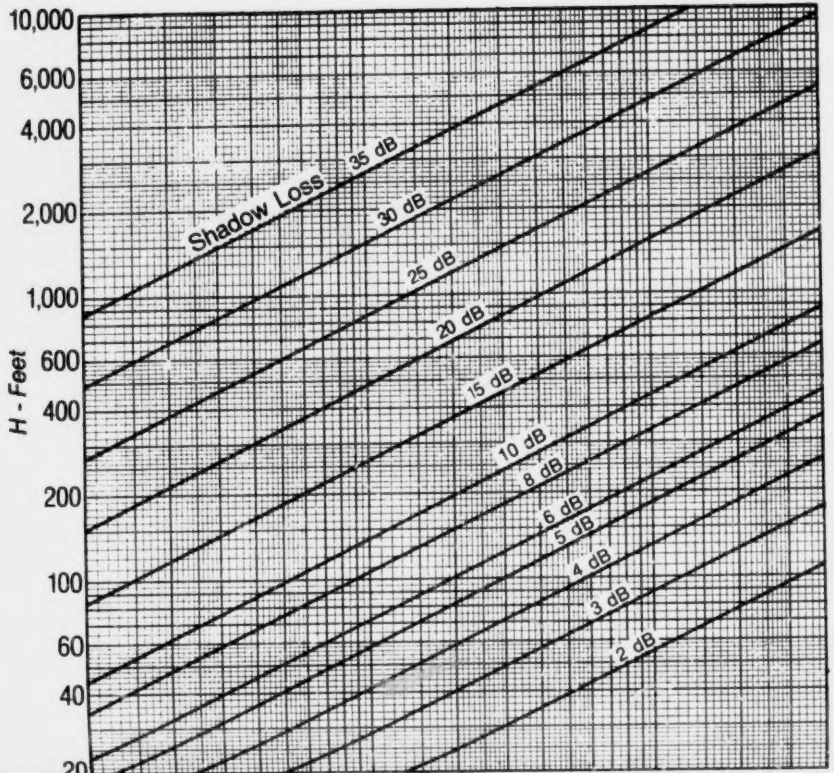
(b) If a hill appears to obstruct the radio path, plot the antenna site elevation, the obstruction elevation and the height of the ship station on rectangular coordinate paper using elevation above mean sea level as the vertical scale and distance in statute miles as the horizontal scale. Then draw a straight line between the antenna and the ship.

(c) If a hill obstructs the imaginary line of sight, determine its height (H) above the imaginary line and its distance (D) from either the coast or ship station, whichever is nearer, as illustrated by examples "A" and "B" on Graph 1.

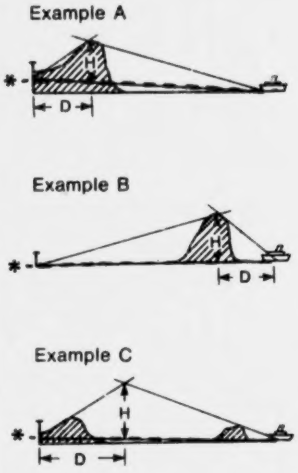
(d) Read the shadow loss from this Graph 1 and subtract that loss from the computed received signal.

(e) Where more than one hill obstructs the transmission path, determine the height and position of a single equivalent hill, as illustrated by example "C" on this graph. Read the shadow loss from this graph for the equivalent hill.

Shadow Loss Chart for VHF Maritime Service



D and H are determined from path profiles


Example A
H
D
*
Example B
H
D
*
Example C
H
D
*

* Average terrain elevation

§ 80.771 Method of computing coverage.

Compute the +17 dBu contour as follows:

(a) Determine the effective antenna height above mean sea level according to the procedures in § 80.757-§ 80.761.

(b) Determine the effective radiated power according to § 80,765. Determine for each radial the distance from the antenna site to the +17 dBu point of field strength using procedures of § 80.765 and § 80.767.

(c) Plot on a suitable map each point of +17 dBu field strength for all radials and draw the contour by connecting the adjacent points by a smooth curve.

§ 80.773 Ratio of desired to undesired signal strengths.

Where a frequency is shared the ratio of desired to undesired signal strengths must be at least 12 dB within the service area of a station.

STATIONS ON SHIPBOARD

Subpart Q—Compulsory Radiotelegraph Installations for Vessels 1600 Gross Tons

§ 80.801 Applicability.

The radiotelegraph requirements of Part II of Title III of the Communications Act apply to all passenger ships irrespective of size and cargo ships of 1600 gross tons and upward. The Safety Convention applies to such ships on international voyages. These ships are required to carry a radiotelegraph installation complying with this subpart.

§ 80.802 Inspection of station.

(a) Every ship of the United States subject to Part II of Title III of the Communications Act or the radio provisions of the Safety Convention must have the required equipment inspected at least once every 12 months. If the ship is in compliance with the requirements of the Safety Convention, a Safety Certificate will be issued; if in compliance with the Communications Act, the license will be endorsed accordingly.

(1) The effective date of ship safety certificates is the date the station is found to be in compliance or not later than one business day later.

(2) At inspection, the minimum field strength capability of the main installation and reserve installation when connected to the main antenna may be shown by the licensee by either producing a record of communications on 500 kHz over a minimum distance of 200 nautical miles for the main installation and 100 nautical miles for the reserve installation which demonstrates the transmission and reception of clearly perceptible signals from ship to ship by day and under normal conditions and circumstances, or providing documentation by a professional engineer not affiliated with the licensee or its service company that the installation produces at one nautical mile a minimum field strength of thirty (30) millivolts per meter for the main installation and ten (10) millivolts per meter for the reserve installation.

(b) Certificates issued in accordance with the Safety Convention must be posted in a prominent and accessible place in the ship.

§ 80.804 Radio station.

The required radio station must comply with the provisions of this subpart in addition to all other applicable requirements of this part. The radio station consists of a radiotelegraph station and a ship radar station. The radiotelegraph station comprises a main and a reserve radiotelegraph installation, electrically separate and electrically independent of each other except as otherwise provided in paragraph (b) of § 80.805, a radiotelephone installation and such other equipment as may be necessary for the proper operation of these installations. The ship radar station comprises a radar installation and such other equipment and facilities as may be necessary for its proper operation.

§ 80.805 Radio installations.

(a) The main radiotelegraph installation includes a main transmitter, a main receiver, a main power supply, a main antenna system and a 2182 kHz radiotelephone distress frequency watch receiver.

(b) The reserve radiotelegraph installation includes a reserve transmitter, a reserve receiver, a reserve power supply, emergency electric lights and reserve antenna system: except that:

(1) In installations on cargo ships of 300 gross tons and upwards but less than 1,600 gross tons, and in installations on cargo ships of 1,600 gross tons and upwards installed prior to November 19, 1952, if the main transmitter complies with all the requirements for the reserve transmitter, the latter may be omitted.

(2) A cargo ship the keel of which was laid prior to June 1, 1954, may either be equipped with a reserve antenna or provided a spare antenna consisting of a single-wire transmitting antenna (including suitable insulators) completely assembled for immediate installation.

(c) The medium frequency radiotelephone installation includes a radiotelephone transmitter, a radiotelephone receiver and an appropriate antenna system.

§ 80.806 Requirements of main installation.

All main radiotelegraph installations must meet the following requirements:

(a) The main antenna must be installed and protected to ensure proper operation of the station. Effective October 14, 1986, the main antenna energized by the main transmitter on the frequency 500 kHz must produce at one nautical mile a minimum field strength of thirty (30) millivolts per meter. If the main antenna is suspended between masts or other supports liable to whipping, a safety link must be installed which, under heavy stress, will reduce breakage of the antenna, the halyards, or any other antenna-supporting elements.

(b) The main transmitter must be capable of meeting the requirements of § 80.253.

(c) The main receiver must efficiently receive A1A and A2A emission on all frequencies within the bands 100-200 kHz and 405-535 kHz. It must have headphones capable of effective operation. The main receiver must have sufficient sensitivity to effectively operate headphones or a loudspeaker when the receiver input is 50 microvolts.

(d) The main power supply must simultaneously (1) energize the main transmitter at its required antenna power, and the main receiver, (2) charge at any required rate all batteries forming part of the radiotelegraph station, and (3) charge the main power supply for this purpose at all times including times of inspection. Under this load condition the voltage of the main power supply at the radio room terminals must not deviate from its rated value by more than 10 percent on vessels completed on or after July 1, 1941, nor by more than 15 percent on vessels completed before that date. While at sea, batteries forming part of the main installation must be fully charged daily.

(e) To measure voltage(s) of the main power supply at its radio room terminals, voltmeter(s) must be permanently installed in the radiotelegraph operating room.

(f) The main installation must be provided with a device permitting changeover from transmission to reception and vice versa without manual switching.

(g) The main installation must be capable of being quickly connected with and tuned to the main antenna and the reserve antenna if one is installed.

§ 80.807 Requirements of radiotelephone installation.

All radiotelephone installations in radiotelegraph equipped vessels must meet the following conditions.

(a) The radiotelephone transmitter must be capable of transmission of A3E or H3E emission on 2182 kHz and must be capable of transmitting clearly perceptible signals from ship to ship during daytime, under normal conditions over a range of 150 nautical miles when used with an antenna system in accordance with paragraph (c) of this section. The transmitter must:

(1) Have a duty cycle which allows for transmission of the radiotelephone alarm signal described in § 80.221.

(2) Provide 25 watts carrier power for A3E emission or 60 watts peak power on H3E emission into an artifi-

cial antenna consisting of 10 ohms resistance and 200 picofarads capacitance or 50 ohms nominal impedance to demonstrate compliance with the 150 nautical mile range requirement.

(3) Have a visual indication whenever the transmitter is supplying power to the antenna.

(4) Have a two-tone alarm signal generator that meets § 80.221.

(5) The radiotelephone transmitter required by this paragraph may be contained in the same enclosure as the receiver required by paragraph (b) of this section. Additionally, these transmitters may have the capability to transmit J3E emissions.

(b)(1) The radiotelephone receiver must receive A3E and H3E emissions when connected to the antenna system specified in paragraph (c) this section and must be preset to 2182 kHz. The receiver must additionally:

(i) Provide an audio output of 50 milliwatts to a loudspeaker when the RF input is 50 microvolts. The 50 microvolt input signal must be modulated 30 percent at 400 Hertz and provide at least a 6 dB signal-to-noise ratio when measured in the rated audio bandwidth.

(ii) Be equipped with one or more loudspeakers capable of being used to maintain a watch on 2182 kHz at the principal operating position or in the room from which the vessel is normally steered.

(2) The receiver required by § 80.805 may be used instead of this receiver. If the watch is stood at the place from which the ship is normally steered, a radiotelephone distress frequency watch receiver must be used for this purpose.

(3) This receiver may be contained in the same enclosure as the transmitter required by paragraph (a) of this section. Additionally, these receivers may have the capability to receive J3E emissions.

(c) The antenna system must be as nondirectional and efficient as is practicable for the transmission and reception of radio ground waves over seawater. The installation and construction of the required antenna must ensure, insofar as is practicable, proper operation in time of emergency. If the required antenna is suspended between masts or other supports subject to whipping, a safety link must be installed which under heavy stress will reduce breakage of the antenna, the halyards, or any other supporting elements.

(d) The radiotelephone installation must be provided with a device for permitting changeover from transmission to reception and vice versa without manual switching.

(e) An artificial antenna must be provided to permit weekly checks, without causing interference, of the automatic device for generating the radiotelephone alarm signal on frequencies other than the radiotelephone distress frequency.

(f) The radiotelephone installation must be located in the radiotelegraph operating room or in the room from which the ship is normally steered.

(g) Demonstration of the radiotelephone installation may be required by Commission representatives to show compliance with applicable regulations.

(h) The radiotelephone installation must be protected from excessive currents and voltages.

(i) The radiotelephone installation must be maintained in an efficient condition.

§ 80.808 Requirements of reserve installation.

(a) All reserve radiotelegraph installations must comply with the following conditions, in addition to all other requirements:

(1) The reserve installation must be capable of being placed in operation within a maximum time of 1 minute.

(2) The reserve antenna must be installed and protected to ensure proper operation in time of an emergency.

(3) Effective October 14, 1986, the main antenna energized by the reserve transmitter on 500 kHz must produce at one nautical mile a minimum field strength of ten (10) millivolts per meter.

(4) The reserve transmitter must meet the requirements of § 80.255.

(5) The reserve receiver must receive A1A and A2B emissions on all frequencies within the band 405-535 kHz. It must have headphones. Additionally a

loudspeaker may be provided for use in accordance with the provisions of § 80.313. The reserve receiver must be able to operate headphones or a loudspeaker when the receiver RF input is 100 microvolts.

(6) The reserve installation must be capable of being quickly connected with and tuned to the main antenna, and the reserve antenna if one is installed.

(7) Emergency electric lights, energized solely by the reserve power supply and connected to it through individual fuses must be provided. The emergency electric lights must illuminate the operating controls of the main and reserve radiotelegraph installations and the radio station clock. The emergency lighting circuits must avoid excessive voltage to the emergency lights during the charging of any batteries forming part of the reserve installation. The provisions of this paragraph do not preclude the use of any other power supply for energizing these lights solely as an additional provision. If a separate emergency radiotelegraph operating room is provided, the requirements of this paragraph apply to it.

(8) The emergency electric lights must be controlled by two-way switches placed near the main entrance to the radiotelegraph operating room and at the radiotelegraph operating position, in all cases where the distance between these points is greater than 8 feet. This requirement applies to stations which replace, or initially install the main or reserve radiotelegraph transmitter on and after May 26, 1965.

(9) There must be readily available under normal load conditions a reserve power supply for the reserve installation which must be independent of the propelling power of the ship and of any other electrical system. The reserve power supply must simultaneously energize the reserve transmitter at its required antenna power and the reserve receiver for at least 6 hours continuously under normal working conditions, and energize the automatic-alarm-signal keying device continuously for a period of 1 hour.

(10) The reserve power supply may be used to energize the following apparatus provided it has adequate cap
ity:

(i) The audible warning appara
included as a component of an
proved radiotelegraph auto alarm;

(ii) The VHF installation requi
by subpart R of this chapter simu
neously with the reserve transmit
in the case of distress, urgency
safety communications;

(iii) The VHF installation requi
by subpart R of this chapter altern
ly with the reserve transmitter
switching device must be fitted
ensure alternate operation only in
case of distress, urgency and sa
communications;

(iv) The radiotelephone alarm si
generator;

(v) The bridge-to-bridge VHF ra
telephone installation required by
part U of this chapter.

(11) The reserve power supply m
be located as near to the reserve tr
mitter and reserve receiver as is pr
cable and must comply with all ap
cable rules and regulations of
United States Coast Guard.
switchboard of the reserve po
supply must wherever possible, be
uated in the radiotelegraph opera
room. If it is not, it must be illumi
ed.

(12) All reserve power supply cir
must be protected from overloads.

(13) Means must be provided
charging any batteries forming a
of the reserve installation, and
batteries must be maintained in a
charged condition daily while at
There must be a device which, du
charging of the batteries, gives a
tinuous indication of the rate and
larity of the charging current.

(14) The cooling system of each
ternal combustion engine used
part of the reserve power supply
be protected to prevent freezin
overheating consistent with the se
and route to be traveled by the
ticular vessel.

(b)(1) The shipowner, opera
company, or station licensee, if di
ed by the Commission or its au
ized representative must demons
that the reserve installation sati
the 6-hour operating requiremen
law.

(2) When the reserve power supply includes a battery, proof of the ability of such battery to operate continuously and effectively for 6 hours can be established by a discharge test over a prescribed period of time, when supplying power at the voltage required for normal operation to an electrical load as prescribed by paragraph (b)(4) of this section.

(3) When the reserve power supply includes an engine-driven generator, proof of the adequacy of the engine fuel supply to operate the unit continuously and effectively for 6 hours may be established by measuring the fuel consumption during 1 hour when supplying power, at the voltage required for normal operation, to an electrical load as prescribed by paragraph (b)(4) of this section.

(4) To determine the electrical load to be supplied by the reserve power supply, the following formula must be used:

(i) One-half of the reserve transmitter current with the key closed; plus

(ii) One-half of the reserve transmitter current with the key open; plus

(iii) One sixth of the current of the automatic radiotelegraph alarm signal keying device when this device is energized; plus

(iv) Current of the reserve receiver; plus

(v) Current of emergency lights; plus

(vi) Current of the bridge-to-bridge transceiver when connected.

(5) At the conclusion of the tests specified in paragraphs (b) (2) and (3) of this section, no part of the reserve power supply must have an excessive temperature rise, nor must the specific gravity or voltage of the battery be below the 90 percent discharge point.

§ 80.809 Routing of power supply wiring.

The conductors connecting the main power supply to the main installation, the reserve supply to reserve installation and the radar power supply to the ship radar station, must be routed to ensure adequate protection from overload, mechanical injury and be kept clear of electrical grounds.

§ 80.810 Use of reserve installation.

The reserve transmitter, and the reserve power supply for the reserve transmitter, are primarily for safety and test communication. This equipment may be used for other communication for a period not to exceed 1 hour per day in the aggregate. The reserve receiver, and the reserve power supply for the reserve receiver if a battery, may be used at any time to maintain a safety watch if such use will not reduce the capabilities of the reserve power supply to energize the associated component or components of the reserve installation for at least 6 consecutive hours.

§ 80.811 Tests of reserve installation and automatic-alarm-signal keying device.

(a) The condition of the reserve installation and of the automatic alarm signal keying device must be determined (with the exception noted in paragraph (b) of this section) prior to the vessel's departure from each port and on each day the vessel is outside of a harbor or port. If the vessel is in two or more ports within one day, the required tests need be made only once. If the vessel is in port for less than one day, the required test for that day may be made before arrival or after departure. The following tests must be made and the results entered in the radiotelegraph station log:

(1) Check the reserve power supply as follows:

(i) Test battery charging circuits for correct polarity and charging rate:

(ii) In the case of lead-acid batteries, determine the specific gravity of the electrolyte.

(iii) In the case of other types of batteries, take voltage readings under normal battery load.

(iv) When an engine-driven generator is used, check the quantity of fuel in the fuel tank;

(2) Test the emergency lighting circuits and emergency electric lights by actual operation;

(3) Test the reserve receiver, while energized by the reserve power supply, by actual operation and comparison of received signals with similar signals received by the main receiver;

(4) On days when not used for communication, the reserve transmitter energized by the reserve power supply must be tested by actual operation

when connected to the main antenna, an artificial antenna or a reserve antenna.

(5) If installed, the reserve antenna must be used at least once each voyage, noting antenna currents;

(6) Test the automatic-alarm-signal keying device for correct timing adjustment of the keying mechanism. *Do not transmit when making this test.*

(b) In the case of vessels loading or discharging flammable, unstable or dangerous cargo, or while berthed at oil terminals or in other comparable areas, predeparture transmitter tests need not be made. In such cases, the provisions of paragraph (a)(4) of this section, in connection with predeparture tests, do not apply if a suitable explanation is entered in the radio station log.

§ 80.812 Automatic-alarm-signal keying device.

The required radiotelegraph station includes one or more devices, of a type accepted by the Commission in accordance with subpart F of this part capable of automatically operating the normal keying circuits of a required radiotelegraph transmitter to transmit the international radiotelegraph alarm signal.

§ 80.813 Installation of automatic-alarm-signal keying device.

(a) The automatic radiotelegraph alarm signal keyer must be installed in the radiotelegraph operating room. It must be possible to key, nonsimultaneously, the main transmitter and the reserve transmitter, and to permit the device to be taken out of operation at any time in order to permit immediate manual transmitter operation. Only one control must be provided for each automatic alarm signal keying device. This control must be located in the radiotelegraph operating room.

(b) The required automatic radiotelegraph alarm signal keying device must be capable of operating efficiently for a continuous period of 1 hour when energized solely by the reserve power supply.

§ 80.814 Radiotelegraph auto alarm.

An auto alarm which is installed and used on board a cargo ship of the
United States pursuant to the
sions of § 80.315 comprises a con
receiving, selecting and warning
of a type accepted by the Comm
in accordance with section 3(x)
Communications Act, capable of
actuated automatically by interc
radio frequency waves formin
international radiotelegraph
signal.

§ 80.815 Installation of radiotel
auto alarm.

Installation of a radiotelegrapl
alarm must comply with the foll
conditions.

(a) The auto alarm must be l
in the radiotelegraph operating
and be installed and protect
insure proper operation. The
telegraph auto alarm system m
operated from the radiotelegra
erating room. A switch must be
ed to:

(1) Transfer the main antenn
all other equipment and connec
the radiotelegraph auto alarm r
and place the auto alarm in
and, back to the original configu
A voltmeter must be provided f
determining that the supply v
are within the operating limits.

(b) The auto alarm must give
dible warning in the radiotel
operating room, in the radio o
cabin, and on the navigating
The alarm must operate contin
after the alarm has been actuat
radiotelegraph alarm signal or
ure of the system, until ma
turned off. Only one switch fo
ping the alarm is authorized, a
must be located in the radiotel
operating room and be capa
manual operation only. Howeve
operating under the general
tion of § 80.836(c) may install a
tional switch on the bridge fo
ping the warning apparatus.

(c) Failure of the auto alarm
type approved prior to July 23
to function normally due to pro
interference must operate a vis
dicator on the bridge. The ty
method of installation of such
indicator must comply with t
quirements of the U.S. Coast Gu

(d) The power supply voltage of an auto alarm must be maintained within definite upper and lower limits. The power supply must have an auxiliary device which:

(1) Will energize the alarm if this power supply fails or its voltage exceeds the limits specified for the particular type of auto alarm involved; or

(2) Will automatically connect the auto alarm to an auxiliary power supply, the voltage of which is within the specified limits.

§ 80.817 Tests of radiotelegraph auto alarm.

(a) The radio officer must at least once every 24 hours while the ship is in the open sea:

(1) Test the auto alarm by using the testing device to determine whether the auto alarm will respond to not less than 4 nor more than 12 consecutive dashes having an approximate duration of 4 seconds and an approximate spacing of 1 second.

(2) Determine the proper functioning of the auto alarm receiver while connected to its normal antenna, by actual operation and comparison of received signals with similar signals received on 500 kHz by the main receiver.

(b) If the auto alarm is not in proper operating condition, the radio officer must report that fact to the master or officer on watch on the bridge.

(c) A statement that the tests specified in this section have been made, and the results of such tests, must be inserted in the radiotelegraph station log.

§ 80.818 Direction finding and homing equipment.

Each compulsory ship of 1,600 gross tons or over whose keel was laid:

(a) *Prior to May 25, 1980,* must be equipped with radio direction finding apparatus in operating condition and approved by the Commission during an inspection.

(b) *On or after May 25, 1980,* must be equipped with radio direction finding apparatus having a homing capability in operating condition and approved by the Commission during an inspection.

§ 80.819 Requirements for radio direction finder.

(a) To be approved by the Commission during an inspection the radio direction finding apparatus must:

(1) Be capable of receiving signals A1A, A2B and R2B emission, on each frequency within the band 285-515 kHz assigned by the Radio Regulations for distress and direction finding and for maritime radio beacons, and be calibrated to take bearings on such signals from which the true bearing and direction may be determined; and

(2) Possess a sensitivity, sufficient to permit the taking of bearings on a signal having a field strength of 50 microvolts per meter.

(b) The calibration of the direction finder must be verified by check bearings or by a further calibration whenever any changes are made in the physical or electrical characteristics or the position of any antennas, and whenever any changes are made in the position of any deck structures which might affect the accuracy of the direction finder. In addition, the calibration must be verified by check bearings at yearly intervals. A record of the calibrations, and of the check bearings made of their accuracy and the accuracy of the check bearings must be kept on board the ship for a period of not less than 1 year.

§ 80.820 Auxiliary receiving antenna.

An auxiliary receiving antenna must be provided when necessary to avoid unauthorized interruption or reduced efficiency of the required watch because the normal receiving antenna is not available because a radio direction finder on board the vessel is operated.

§ 80.821 Installation of direction finder.

(a) The direction finder must be located to minimize interference from noise.

(b) The direction finder antenna system must be erected so that the determination of bearings will not be hindered by the proximity of other antennas, cranes, wire halyards, or large metal objects.

§ 80.822 Contingent acceptance of direction finder calibration.

(a) When the required calibration can not be made before departure from a harbor or port for a voyage in the open sea, the direction finder may be tentatively approved on condition that the master certifies in writing that the direction finder will be calibrated by a competent technician; and

(b) In the absence of acceptable calibration at the time of the subsequent inspection the Commission may withdraw approval of the direction finder until such evidence is available.

§ 80.823 Check bearings by authorized ship personnel.

The requirement for calibration by check bearings is met if:

(a) The required verification by check bearings are made not more than 90 days prior to the date of the annual detailed inspection of the radiotelegraph station;

(b) The verification consists of a comparison of simultaneous visual and radio direction finder bearings. At least one comparison bearing must be taken in each quadrant, within plus or minus 20 degrees from the following bearings relative to the ship's heading: 45 degrees; 135 degrees; 225 degrees; 315 degrees;

(c) The verification shows the visual bearing relative to the ship's heading and the difference between the visual and radio direction finder bearing, and the date each check bearing is taken.

§ 80.824 Homing facility requirements.

(a) Direction finding equipment used on compulsory vessels whose keel was laid on or after May 25, 1980, must additionally have a homing facility which is:

(1) Capable of operating with A1A, A2B, H2B and H8E emission on any frequency in the band 2167-2197 kHz;

(2) Capable of taking direction finding bearings on the radiotelephone distress frequency 2182 kHz without ambiguity of sense within an arc of 30 degrees on either side of the bow;

(3) Installed with due regard to CCIR Recommendation 428-2:

(4) Sufficiently sensitive, in the absence of interference, to take bearings
on a signal having a field strength
25 microvolts per meter;

(5) Capable of determining its acc
racy by comparison of visual or calc
lated bearings and homing facili
bearings. Comparisons must be mad
at −30, 0 and +30 degrees relative
the ships heading to show that th
correct sense is indicated.

§ 80.825 Radar installation requiremen and specifications.

(a) Radar installations on boar
ships that are required by the Safe
Convention or the U.S. Coast Guard
be equipped with radar must comp
with either the document referenc
in paragraph (a)(1) of this section
the applicable document referenced
paragraphs (a)(2) through (a)(4)
this section. These documents are
corporated by reference in accordan
with 5 U.S.C. 552(a). The documen
contain specifications, standards a
general requirements applicable
shipboard radar equipment and sh
board radar installations. For purpos
of this part, the specifications, stan
ards and general requirements stat
in these documents are mandatory
respective of discretionary langua
Radar documents are available for
spection at the Commission Headqu
ters in Washington, DC, or may be
tained from the Radio Technical Co
mission for Maritime Servi
(RTCM), P.O. Box 19087, Washingt
DC 20036.

(1) Radar installed on ships of 5
gross tons and upwards on or aft
July 1, 1988, must comply with t
provisions of RTCM Paper 133-87/
103-33 including Appendix A. Tit
"RTCM Recommended Performan
Specification for a General Purp
Navigational Radar Set for Ocean
ing Ships of 500 Gross Tons and U
wards for New Radar Installation
Title of Appendix A: "General P
pose Shipborne Navigational Ra
Set for Oceangoing Ships *Design a*
Testing Specifications." Docume
originally approved by RTCM Aug
15, 1985 and revised May 15, 1987.

(2) Radar installed on ships of 1,6
gross tons and upwards on or bef
April 27, 1981, must comply with t
provisions of Volume II of RTCM S

cial Committee No. 65 Final Report; Part II. Title: "Performance Specification for a General Purpose Navigational Radar Set for Oceangoing Ships of 1,600 Tons Gross Tonnage and Upwards for Ships Already Fitted." Document approved by RTCM July 18, 1978; effective as FCC requirement on April 27, 1981.

(3) Radar installed on ships of 1,600 gross tons and upwards after April 27, 1981 and before July 1, 1988, must comply with the provisions of Volume II of RTCM Special Committee No. 65 Final Report with Change 1 entered; Part I including Appendix A. Title: "Performance Specification for a General Purpose Navigational Radar Set for Oceangoing Vessels of 1,600 Tons Gross Tonnage and Upwards for New Radar Installations." Title of Appendix A: "General Purpose Shipborne Navigational Radar Set for Oceangoing Ships *Design and Testing Specifications.*" Document approved by RTCM July 18, 1978; effective as FCC requirement on April 27, 1981.

(4) Ships between 500 and 1,600 gross tons constructed on or after September 1, 1984, with radar installed before July 1, 1988, must comply with Regulation 12, Chapter V of the Safety Convention and with the provisions of Inter-Governmental Maritime Consultative Organization (IMCO) [Now International Maritime Organization (IMO)] Resolution A.477(XII). Title: "Performance Standards for Radar Equipment." Adopted by IMCO November 19, 1981.

(b) For ships of 10,000 gross tons or more and any other ship that is required to be equipped with two radar systems, each of these systems must be capable of operating independently and must comply with the specifications, standards and general requirements established by paragraph (a) of this section. One of the systems must provide a display with an effective diameter of not less than 340 millimeters (13.4 inches) (16-inch cathode ray tube). The other system must provide a display with an effective diameter of not less than 250 millimeters (9.8 inches) (12-inch cathode ray tube).

(c) Recommendations for tools, test equipment, spares and technical manuals are contained in Part IV of Volume III of the RTCM SC-65 Final Report approved by RTCM July 18, 1978.

[52 FR 35247, Sept. 18, 1987]

§ 80.826 Interior communication systems.

(a) An interior communicaiton system must be provided between the bridge of the ship and the radiotelegraph operating room in all cases where the radiotelegraph operating room does not adjoin or open onto the navigating bridge structure. An interior communication system must also be provided between the bridge and the location of the radio direction finding apparatus whenever the latter is not located on the bridge or within any compartment adjoining or opening onto the navigating bridge structure. If the operating position of the reserve radio installation is not located in the room normally used for operating the main radio installation, an interior communication system must be separately provided between the bridge and each of these radio operating positions.

(b) If a vessel has more than one location from which it is normally controlled and steered, the interior communication system between the radiotelegraph operating room and bridge must include communication to each such location. The existence at a location of all of the following factors will require that a point of communication be established there: (1) A steering wheel; (2) a compass; (3) an engine order telegraph; (4) control of the whistle; and (5) a wheelhouse enclosure.

(c) Paragraph (b) of this section does not apply to locations established solely for emergency use in event of failure of the normal steering facilities or locations used solely while docking or maneuvering a ship while in port or for brief periods while navigating the ship in close quarters on inland waters.

§ 80.827 Requirements for interior communication systems.

The interior communication systems required by § 80.826 must provide two-way calling and voice communication, be independent of any other communication system in the ship, and be of a type approved by the United States Coast Guard. The location and termination of individual systems is subject to approval by the Commission.

§ 80.828 Radiotelegraph station clock.

A working clock equipped with a sweep seconds hand and having a dial not less than 5 inches in diameter, the face of which is marked to indicate the silence periods prescribed for the radiotelegraph service by the International Radio Regulations, must be provided. It must be securely mounted in the radiotelegraph operating room in such a position that the entire dial can be clearly observed by the radio officer from the normal radiotelegraph operating position, from the operating position where the international radiotelegraph alarm signal would ordinarily be transmitted by hand, and from the position used for testing the auto alarm (if installed). If a separate emergency radiotelegraph operating room is provided, the requirements of this section apply to it also.

§ 80.829 Survival craft nonportable radiotelegraph installation.

(a) A survival craft nonportable radiotelegraph installation required by law to be provided in a motor lifeboat must include the following components as a minimum:

(1) A transmitting and receiving antenna and antenna accessories,

(2) An artificial antenna for testing purposes;

(3) A transmitter with keying arrangements for use of radiotelegraphy, an associated radio receiver with headphones, and a suitable device for converting from the power supply battery voltage to the voltages used by the transmitter and receiver;

(4) A power supply;

(5) A device for a ground connection to the water when the lifeboat is afloat.

(b) Components of a survival craft nonportable radiotelegraph installation specified in paragraph (a)(2) of this section must be type accepted of §§ 80.263 and 80.265.

(c) The radiotelegraph equipment must be installed in a cabin large enough to accommodate both the equipment and the person usin The operation of the radiotelegr installation must not be interf with by the survival craft engine w it is running, whether or not a bat is on charge.

(d) The antenna must be a si wire inverted L type with a horizo section of the maximum practic length and a height above the m waterline of not less than 6 meter feet), and must be so designed th can be quickly erected and utilize a person in the lifeboat while afloa

(e) The ground system must co with the following requirements:

(1) The radio installation whe stalled in a metal hull lifeboat mu grounded to the hull of the life The ground connection must be p ically located in a position where inaccessible to the normal move of occupants or accessories in the boat;

(2) The radio installation whe stalled in a lifeboat having a no tallic hull must be grounded to a plate or strips of corrosion resi metal having a total area of at le square feet and located on the hu the lifeboat below the waterline.

(f) When the lifeboat is afloat installation must be capable of d oping an antenna current such the product of the maximum heig the antenna above the mean su of the water, expressed in feet, the r.m.s. antenna current on the quency 500 kHz, expressed in amp is not less than 32.

§ 80.830 Power supply for survival nonportable radiotelegraph ins tion.

(a) The power supply for the su al craft nonportable radiotelegrap stallation must consist of a batter pable of operating the survival radiotelegraph installation for at 6 hours continuously under no working conditions.

(b) The battery may power e ment other than the radioteleg installation (except that it must n used to supply power to any e starting motor or ignition system vided such additional use will no versely affect the required capabi of the battery. All circuits connected to the battery must be independently fused.

(c) The battery must be kept charged at all times while at sea. The charging of the battery must not require its removal from the survival craft in which it is installed. The necessary charging equipment must not interfere with the launching of the survival craft, and must be easily and quickly removable. The charging circuit for the battery must be routed through the radiotelegraph operating room, and include a device located in the radiotelegraph operating room which will give continuous indication of the polarity and the rate of charge.

(d) Installation must provide for charging of the battery by means of a generator on the survival craft engine.

(e) Subject to approval of the United States Coast Guard, the battery must be mounted in a suitable container that will provide protection from salt water spray and also allow proper ventilation.

§ 80.831 Survival craft portable radiotelegraph equipment.

(a) Survival craft portable radiotelegraph equipment required by law to be provided must be type accepted by the Commission as capable of meeting the provisions of §§ 80.263 and 80.265.

(b) The equipment must be stowed in the radio room, bridge or a protected location near a lifeboat and be readily accessible for transfer to a lifeboat. However, in tankers of 3,000 gross tons and over in which lifeboats are fitted amidships and aft, this equipment must be kept in a suitable place in the vicinity of those lifeboats which are farthest away from the ship's main transmitter.

(c) Equipment for totally enclosed lifeboats must meet the extra requirements specified in § 80.265.

§ 80.832 Tests of survival craft radio equipment.

(a) Except for emergency position indicating radio beacons and two-way radiotelephone equipment, inspections and tests of survival craft radio equipment must be conducted by the licensee at weekly intervals while the ship is at sea or, if a test or inspection has not been conducted within a week prior to its departure, within 24 hours prior to the ship's departure from a port. The inspection and tests must include operation of the transmitter connected to an artificial antenna and determination of the specific gravity or voltage under normal load of any batteries.

(b) When the ship is in a harbor or port of the United States an authorized representative of the Commission may require:

(1) Inspection and test of the survival craft radio equipment in the survival craft afloat, including an operational test of the transmitter and receiver connected to the required antenna to determine that the equipment is in operating condition;

(2) Demonstration in accordance with § 80.808 that a battery used as a part of the survival craft nonportable radio installation is capable of energizing the installation for the required 6 hours.

(c) The results of the inspections and test must be made known to the master, and be entered in the ship's radio station log, or in the ship's log if the ship is not provided with a radio station.

§ 80.833 Class S survival craft emergency position indicating radiobeacons (EPIRB's).

(a) Survival craft emergency position indicating radiobeacons, Class S, required to comply with title 46 of the Code of Federal Regulations must be type accepted to meet the provisions of § 80.1059.

(b) The Class S EPIRB must be stowed in the survival craft.

(c) The Class S EPIRB must be tested at intervals not to exceed twelve months.

(d) Batteries must be replaced after the date specified in § 80.1053(e), or after the transmitter has been used in an emergency situation, whichever is earlier

§ 80.834 Survival craft portable two-way radiotelephone.

(a) Survival craft portable two-way radiotelephone transceivers must meet the provisions of § 80.271.

(b) The equipment must be stowed in the radio room, on the bridge or in a location readily accessible for transfer to life boats when not being used by shipboard personnel to satisfy the vessel's operational requirements.

(c) When not in routine use the survival craft two-way radiotelephone transceivers must be operationally tested once a week. Operational test should be conducted with equipment separated as far as practical and in the case of UHF equipment must include tests on the frequency 457.525 MHz.

(d) All survival craft two-way radiotelephones associated with a ship must operate in the same frequency band (VHF or UHF).

§ 80.835 Ship and survival craft station spare parts, tools, instruction books, circuit diagrams and testing equipment.

(a) Each ship station must be provided with such spare parts, tools, testing equipment, instruction books and circuit diagrams as will enable the radiotelegraph installation and survival craft station to be maintained in working condition while at sea. Each ship station licensee must compile a list of spare parts, tools, test equipment and circuit diagrams it considers necessary for compliance with this requirement. This list must be available at inspection. The Commission may consider equipment manufacturer lists of recommended spare parts, tools, test equipment and repair circuit diagrams in determining compliance with this sub-section. Spare parts for the survival craft station must be kept with that station. Other items must be located convenient to the radio room.

(b) The testing equipment must include an instrument or instruments for measuring A.C. volts, D.C. volts and ohms.

§ 80.836 General and individual ship exemptions.

(a) All U.S. passenger vessels of less than 100 gross tons, not subject to the radio provisions of the Safety Convention, are exempt from the radiotelegraph provisions of Title III, Part II of the Communications Act, provided that the vessels are navigated not more than 100 nautical miles from the nearest land and are equipped with a radiotelephone installation fully complying with the provisions of Part III of Title III of the Communications Act and the Commission's rules and regulations including the requirements with respect to certificates, operators and listening watches.

(b) All newly constructed U.S. cargo vessels of 1600 gross tons and upward are exempt from the radiotelegraph and radio direction finding provisions of Part II of Title III of the Communications Act when navigated on sea trials, not more than 150 nautical miles from the nearest land, if the following conditions are met:

(1) The vessel is equipped with a radiotelephone capable of operation on 2182 kHz and equipped with a radiotelephone alarm signal generator. The vessel may carry an additional portable radiotelephone, located in the wheelhouse, equipped with a radiotelephone alarm signal generator to satisfy the radiotelephone alarm signal generator requirement;

(2) The radio direction-finding apparatus is calibrated during the sea trials;

(3) A continous watch is maintained in 2182 kHz whenever the radiotelephone is not being used for authorized traffic during the sea trials; and

(4) The local FCC Engineer in Charge is advised of the dates and routes of the sea trials.

(c) Cargo ships of 1600 gross tons and upward navigated on domestic voyages along the coasts of the contiguous 48 states are exempt from the radio telegraph requirements of Part II of Title III of the Communications Act, if the following criteria are met:

(1) The routes of the voyage are never more than 150 nautical miles from the nearest land.

(2) The ship has a satellite terminal providing both voice and telex.

(3) The ship has a single sideband radiotelephone with voice channels capable of operating on any distress and safety channel in the marine bands.

(4) The ship has a narrow-band direct printing radiotelegraph with SITOR.

(5) The ship has a separate 2182 kHz radiotelephone distress frequency

watch receiver with a radiotelephone alarm signal generator.

(6) The ship has at least two VHF transceivers.

(7) The above equipment has provisions for emergency and reserve power sources.

(8) The ship has a 500 kHz auto alarm receiver and the capability of relaying the distress messages received to shore via one of the systems listed above.

(9) The ship participates in the AMVER system.

(10) The ship carries licensed operators to operate and maintain all of the ship's systems used for distress and safety.

(d) These exemptions may be terminated at any time without hearing if, in the Commission's discretion, the need for such action arises.

Subpart R—Compulsory Radiotelephone Installations for Vessels 300 Gross Tons

§ 80.851 Applicability.

The radiotelephone requirements of Part II of Title III of the Communications Act apply to cargo ships of 300 gross tons and upward but less than 1600 gross tons. The radiotelephone requirements of the Safety Convention apply to passenger ships irrespective of size and cargo ships of 300 gross tons and upward on international voyages. These ships are required to carry a radiotelephone installation complying with this subpart.

§ 80.853 Radiotelephone station.

(a) The radiotelephone station is a radiotelephone installation and other equipment necessary for the proper operation of the installation.

(b) The radiotelephone station must be installed to insure safe and effective operation of the equipment and to facilitate repair. Adequate protection must be provided against the effects of vibration, moisture, and temperature.

(c) The radiotelephone station and all necessary controls must be located at the level of the main wheelhouse or at least one deck above the ship's main deck.

(d) The principal operating position of the radiotelephone station must be in the room from which the ship is normally steered while at sea. In installations on cargo ships of 300 gross tons and upwards but less than 500 gross tons on which the keel was laid prior to January 1, 1965, the location of the principal operating controls may be in a room adjoining and opening into the room from which the vessel is normally steered while at sea. If the station can be operated from any location other than the principal operating position, a positive means must be provided at the principal operating position to take full control of the station.

(e) The use of a independent communication system between the principal operating position and all other operating locations is acceptable as a method for taking control at the principal operating position. For stations first placed in service on or after June 1, 1956 the use of this method for taking control at the principal operating position is acceptable only for operating locations in the chartroom or master's quarters.

§ 80.854 Radiotelephone installation.

The radiotelephone installation includes:

(a) A radiotelephone transmitter;

(b) A receiver as specified in § 80.858(a);

(c) A radiotelephone distress frequency watch receiver specified in § 80.269;

(d) A main source of energy;

(e) A reserve source of energy, when required by § 80.860(a);

(f) An antenna system.

§ 80.855 Radiotelephone transmitter.

(a) The transmitter must be capable of transmission of H3E and J3E emission on 2182 kHz, and J3E emission on 2638 kHz and at least two other frequencies within the band 1605 to 3500 kHz available for ship-to-shore or ship-to-ship communication.

(b) The duty cycle of the transmitter must permit transmission of the international radiotelephone alarm signal.

(c) The transmitter must be capable of transmitting clearly perceptible signals from ship to ship during daytime under normal conditions over a range of 150 nautical miles.

(d) The transmitter complies with the range requirement specified in paragraph (c) of this section if:

(1) The transmitter is capable of being matched to actual ship station transmitting antenna meeting the requirements of § 80.863; and

(2) The output power is not less than 60 watts peak envelope power for H3E and J3E emission on the frequency 2182 kHz and for J3E emission on the frequency 2638 kHz into either an artificial antenna consisting of a series network of 10 ohms resistance and 200 picofarads capacitance, or an artificial antenna of 50 ohms nominal impedance. An individual demonstration of the power output capability of the transmitter, with the radiotelephone installation normally installed on board ship, may be required.

(e) The transmitter must provide visual indication whenever the transmitter is supplying power to the antenna.

(f) The transmitter must be protected from excessive currents and voltages.

(g) A durable nameplate must be mounted on the transmitter or made an integral part of it showing clearly the name of the transmitter manufacturer and the type or model of the transmitter.

(h) An artificial antenna must be provided to permit weekly checks of the automatic device for generating the radiotelephone alarm signal on frequencies other than the radiotelephone distress frequency.

§ 80.856 Automatic radiotelephone alarm signal generator.

The transmitter must be equipped with an international radiotelephone alarm signal generator type accepted by the Commission. See § 80.221.

§ 80.857 Installation of automatic radiotelephone alarm signal generator.

The controls of the automatic radiotelephone alarm signal generator required by § 80.856 must be located at the principal radiotelephone operating position only. The controls must permit instant use of this device to modulate the required transmitter and permit the device to be taken out of operation at any time so that the transmitter may be immediately voice modulated for transmission of a distress call and message.

§ 80.858 Radiotelephone receiver.

(a) The receiver required by § 80.854(a) of this part must be capable of reception of H3E and J3E emissions on the radiotelephone distress frequency. The receiver must be capable of reception of J3E emissions on 2638 kHz and the receiving frequencies associated with the transmitting frequencies authorized pursuant to § 80.855(a).

(b) In addition to the receiver required by paragraph (a) of this section, a radiotelephone distress frequency watch receiver meeting the technical standards of § 80.269 must be provided.

(c) One or more loudspeakers capable of being used to maintain the distress frequency (2182 kHz) watch at the principal operating position and at any other place where the listening watch is performed must be provided.

(d) The receiver required by paragraph (a) of the section must:

(1) Have a sensitivity of 50 microvolts;

(2) Be capable of operation when energized by the main source of energy, and by the reserve source of energy if a reserve source is required by § 80.860(a);

(3) Be protected from excessive currents and voltages;

(4) Be provided with a nameplate showing the name of the receiver manufacturer and the type or model.

(e) The sensitivity of a receiver is the strength in microvolts of a signal, modulated 30 percent at 400 cycles per second, required at the receiver input to produce an audio output of 50 milliwatts to the loudspeaker with a signal-to-noise ratio of at least 6 decibels. Evidence of a manufacturer's rating or a demonstration of the sensitivity of a required receiver computed on this basis must be furnished upon request of a Commission representative.

§ 80.859 Main power supply.

(a) The main power supply must simultaneously energize the radiotelephone transmitter at its required antenna power and the required receivers. Under this load condition the voltage of the main power supply at the radiotelephone input terminals must not deviate from its rated potential by more than 10 percent on ships completed on or after July 1, 1941, nor by more than 15 percent on ships completed before that date.

(b) Means must be provided for charging any batteries used as a main power supply. A continuous indication of the rate and polarity of the charging current must be provided during charging of the batteries.

§ 80.860 Reserve power supply.

(a) When the main power supply is not on the same deck as the main wheelhouse or at least one deck above the vessel's main deck, a reserve power supply must be provided and must be so situated. The location of the reserve power supply must be located as near to the required transmitter and receivers as practicable and meet all applicable rules and regulations of the United States Coast Guard.

(b) The reserve power supply must be independent of the propelling power of the ship and of any other electrical system, and must simultaneously energize the radiotelephone transmitter at its required antenna power, the required receivers, the emergency light and the automatic radiotelephone alarm signal generator. The reserve power supply must be available at all times.

(c) The reserve power supply may be used to energize the bridge-to-bridge radiotelephone and the VHF radiotelephone installation required by § 80.871.

(d) All circuits connected to the reserve power supply must be protected from overloads.

(e) Means must be provided for charging any batteries used as a reserve power supply. A continuous indication of the rate and polarity of the charging current during charging of the batteries must be provided.

(f) The cooling system of each internal combustion engine used as a part of the reserve power supply must be adequately treated to prevent freezing or overheating consistent with the season and route to be traveled by the particular vessel involved.

(g) The reserve power supply must be available within 1 minute.

[51 FR 31213, Sept. 2, 1986; 52 FR 35246, Sept. 18, 1987]

§ 80.861 Required capacity.

If the main power supply or the reserve power supply provided for the purpose of complying with §§ 80.859 and 80.860 consists of batteries, the batteries must have sufficient reserve capacity available at all times while the vessel is leaving or attempting to leave a harbor or port for a voyage in the open sea, and while being navigated in the open sea outside of a harbor or port, to permit operation of the radiotelephone transmitter and the required receivers for at least 6 hours continuously under normal working conditions.

§ 80.862 Proof of capacity.

(a) When directed by the Commission or its authorized representative, the station licensee must prove that the requirements of § 80.861 are met.

(b) Proof of the ability of a battery used as a main or reserve source to operate continuously for 6 hours can be established by a discharge test over a prescribed period of time, when supplying power at the voltage required for normal and operation to an electrical load as prescribed by paragraph (d) of this section.

(c) When the reserve power supply is an engine-driven generator, proof of the adequacy of the engine fuel supply to operate the unit contiuously for 6 hours can be established by measuring the fuel consumption for 1 hour when supplying power, at the voltage required for normal operation, to an electrical load as prescribed by paragraph (d) of this section.

(d) In determining the electrical load to be supplied, the following formula must be used:

(1) One-half of the current of the required transmitter at its rated power output.

(2) One fourth of the current of the automatic radiotelephone alarm signal generator; plus

(3) Current of receiver; plus

(4) Current of emergency light(s); plus

(5) Current of the bridge-to-bridge transceiver when connected.

(e) At the conclusion of the test specified in paragraphs (b) and (c) of this section, no part of the main or reserve power supply must have an excessive temperature rise, nor must the specific gravity or voltage of any battery be below 90 percent discharge point of the fully charged value.

§ 80.863 Antenna system.

(a) An antenna system must be installed which is as nondirectional and as efficient as is practicable for the transmission and reception of radio ground waves over seawater. The installation and construction of the required antenna must insure operation in time of emergency.

(b) If the required antenna is suspended between masts or other supports liable to whipping, a safety link which, under heavy stress, will operate to greatly reduce such stress without breakage of the antenna, the halyards, or other antenna-supporting elements, must be installed.

(c) When an electrical ground connection is used as an element of the antenna system, the connection must be efficient.

§ 80.864 Emergency electric lights.

(a) Emergency electric light(s) must be installed to illuminate the operating controls of the radiotelephone installation at the principal operating position, the card of instructions, and the radiotelephone station clock if the latter is not self-illuminated.

(b) The emergency electric light(s) must be energized from the reserve power supply, if a reserve power supply is required. In cases where a reserve power supply is not required, the emergency lights must be energized independently of the system which supplies the normal lighting.

§ 80.865 Radiotelephone station clock.

A clock having a face of at least 5 inches in diameter must be mounted in a position that can be observed from the principal operating position.

§ 80.866 Spare antenna.

A spare transmitting antenna completely assembled for immediate erection must be provided. If the installed transmitting antenna is suspended between supports, this spare antenna must be a single-wire transmitting antenna of the same length and must also include suitable insulators.

§ 80.867 Ship station tools, instruction books, circuit diagrams and testing equipment.

(a) Each ship station must be provided with such tools, testing equipment, instruction books and circuit diagrams to enable the radiotelephone installation to be maintained in efficient working condition while at sea. Each ship station licensee must compile a list of spare parts, tools, test equipment and circuit diagrams it considers necessary for compliance with this requirement. This list must be available at inspection. The Commission may consider equipment manufacturer lists of recommended spare parts, tools, test equipment, and repair circuit diagrams in determining compliance with this subsection. These items must be located convenient to the radio room.

(b) The testing equipment must include an instrument or instruments for measuring A.C. volts, D.C. volts and ohms.

§ 80.868 Card of instructions.

A card of instructions giving a clear summary of the radiotelephone distress procedure must be securely mounted and displayed in full view of the principal operating position.

§ 80.869 Test of radiotelephone station.

Unless the normal use of the required radiotelephone station demonstrates that the equipment is operating, a test communication on a required or working frequency must be made each day the ship is navigated. When this test is performed by a person other than the master and the equipment is found to be defective the master must be promptly notified.

870 Survival craft radio equipment.

) A Class S survival craft emergen- position indicating radiobeacon, IRB) required to be carried to ply with title 46 of the Code of eral Regulations must meet the visions of § 80.833.

) A survival craft two-way radio- phone apparatus must meet the visions of § 80.834.

871 VHF radiotelephone station.

) All passenger ships irrespective ze and all cargo ships of 300 gross and upwards subject to part II of III of the Communications Act or ne Safety Convention are required rry a VHF radiotelephone station plying with this subpart. Ships ect only to the Communications may use a VHF radiotelephone in- ation meeting the technical stand- of the Bridge-to-Bridge Act to fy the watch requirements of 305(a)(3) if the equipment can smit and receive on 156.800 MHz.

The VHF radiotelephone station be installed to insure safe and ef- ve operation of the equipment facilitate repair. It must be pro- d against vibration, moisture and erature.

The principal operating position e radiotelephone station must be e room from which the ship is ally steered while at sea.

The radiotelephone stations on subject to Part II of Title III of Communications Act must be ca- of operating on the frequency 00 MHz and in other respects the requirements of § 80.143. The telephone stations on ships sub- o the Safety Convention must be le of operating in the simplex on the ship station transmitting encies specified in the frequency 156.025 MHz to 157.425 MHz and e semiduplex mode on the two ency channels specified in the ving table:

nnel designators	Transmitting frequencies (MHz)	
	Ship station	Coast station
	156.025	160.625
	156.050	160.650
61	156.075	160.675
02	156.100	160.700
62	156.125	160.725
03	156.150	160.750
63	156.175	160.775
04	156.200	160.800
64	156.225	160.825
05	156.250	160.850
65	156.275	160.875
06	156.300	....
66	156.325	160.925
07	156.350	160.950
67	156.375	156.375
08	156.400	....
68	156.425	156.425
09	156.450	156.450
69	156.475	156.475
10	156.500	156.500
11	156.550	156.550
71	156.575	156.575
12	156.600	156.600
72	156.625	....
13	156.650	156.650
73	156.675	156.675
14	156.700	156.700
74	156.725	156.725
15	156.750	156.750
75	[1]	[1]
16	156.800	156.800
76	[1]	[1]
17	156.850	156.850
77	156.875	....
18	156.900	161.500
78	156.925	161.525
19	156.950	161.550
79	156.975	161.575
20	157.000	161.600
80	157.025	161.625
21	157.050	161.650
81	157.075	161.675
22	157.100	161.700
82	157.125	161.725
23	157.150	161.750
83	157.175	161.775
24	157.200	161.800
84	157.225	161.825
25	157.250	161.850
85	157.275	161.875
26	157.300	161.900
86	157.325	161.925
27	157.350	161.950
37	157.375	161.975
28	157.400	162.000
88	157.425	162.025

[1] Guard band.

[51 FR 31213, Sept. 2, 1986; 52 FR 35246, Sept. 18, 1987, as amended at 54 FR 40059, Sept. 29 1989]

§ 80.872 The VHF radiotelephone installation.

The VHF radiotelephone installation includes:

(a) A VHF radiotelephone transmitter,

(b) A VHF radiotelephone receiver,

(c) A power supply,

(d) An antenna system.

§ 80.873 VHF radiotelephone transmitter.

(a) The transmitter must be capable of transmission of G3E emission on 156.300 MHz and 156.800 MHz, and on frequencies which have been specified for use in a system established to promote safety of navigation. Vessels in waters of other Administrations are required to communicate on any channel designated by that Administration for navigational safety in the bands specified in § 80.871(d).

(b) The transmitter must be adjusted so that the transmission of speech normally produces peak modulation within the limits of 75 percent and 100 percent.

(c) The transmitter must deliver a carrier power between 8 and 25 watts into a 50 ohm effective resistance. Provision must be made for reducing the carrier power to a value between 0.1 and 1.0 watts.

(d) The transmitter complies with the power output requirements specified in paragraph (c) of this section when:

(1) The transmitter is capable of being adjusted for efficient use with an actual ship station transmitting antenna meeting the requirements of § 80.876; and

(2) The transmitter has been demonstrated capable, with normal operating voltages applied, of delivering not less than 8 watts of carrier power into 50 ohms effective resistance over the frequency band specified in § 80.871(d). An individual demonstration of the power output capability of the transmitter, with the radiotelephone installation normally installed on board ship, may be required; and

(3) It is type accepted as required by subpart F of this part.

§ 80.874 VHF radiotelephone receiver.

(a) The receiver used for providing the watch for navaigational safety required by § 80.313 must be type accepted by the Commission and capable of effective reception of G3E emission on the frequencies required by § 80.871(d) when connected to the antenna specified in § 80.876.

(b) The receiver must have a usable sensitivity of 0.5 microvolts.

(c) The receiver must deliver adequate audio output power to be heard in the ambient noise level likely to be expected on board ships with a loudspeaker and/or a telephone handset.

(d) In the simplex mode when the transmitter is activated the receiver output must be muted.

§ 80.875 VHF radiotelephone power supply.

(a) There must be readily available for use under normal load conditions a power supply sufficient to simultaneously energize the VHF transmitter at its required antenna power, and the VHF receiver. Under this load condition the voltage of the source of energy at the power input terminals of the VHF radiotelephone installation must not deviate from its rated value by more than 10 percent on ships completed on or after March 1, 1957, nor by more than 15 percent on ships completed before that date.

(b) When the power supply for the VHF radiotelephone installation consists of batteries, they must be installed in the upper part of the ship, secured against shifting with motion of the ship, capable of operating the installation for 6 hours, and accessible with not less than 10 inches head room.

(c) Means must be provided for charging any rechargeable batteries used in the ship's VHF radiotelephone installation. There must be provided a device which, during charging of the batteries, will give a continuous indication of the charging current.

(d) The VHF radiotelephone installation may be connected to the reserve power supply of a compulsorily fitted radiotelephone or radiotelegraph installation.

§ 80.876 VHF radiotelephone antenna system.

A vertically polarized nondirectional antenna must be provided for VHF radiotelephone installations. The construction and installation of this antenna must insure proper operation in an emergency.

§ 80.877 Controls and indicators required for VHF radiotelephone installation.

The controls and indicators used on equipment of the VHF radiotelephone installation must meet the following standards:

(a) The size of controls must easily permit normal adjustment. The function and the setting of the controls must be clearly indicated.d

(b) Controls must be illuminated to permit satisfactory operation of the equipment.

(c) Means must be provided to reduce to extinction any light output from the equipment which could affect safety of navigation.

(d) An on/off switch must be provided for the entire installation with a visual indication that the installation is switched on.

(e) The equipment must indicate the channel number, as given in the Radio Regulations, to which it is tuned. It must allow the determination of the channel number under all conditions of external lighting. Channel 16 must be distinctively marked.

(f) The receiver must have a manual olume control and a squelch control.

(g) If the external controls are on a eparate control unit and more than ne such control unit is provided, the ne on the bridge must have priority ver the others. When there is more han one control unit, indication must given to the other(s) that the transitter is in operation.

0.879 Radar installation requirements and specifications.

Ships of 500 gross tons and upwards at are constructed on or after Sepnber 1, 1984, must comply with the lar installation requirements and ecifications contained in § 80.825 of s part.

FR 35246, Sept. 18, 1987]

Subpart S—Compulsory Radiotelephone Installations for Small Passenger Boats

§ 80.901 Applicability.

The provisions of Part III of Title III of the Communication Act require United States vessels which transport more than six passengers for hire while such vessels are being navigated on any tidewater within the jurisdiction of the United States adjacent or contiguous to the open sea, or in the open sea to carry a radiotelephone installation complying with this subpart. The provisions of Part III do not apply to vessels which are equipped with a radio installation for compliance with Part II of Title III of the Act, or for compliance with the Safety Convention, or to vessels navigating on the Great Lakes.

§ 80.903 Inspection of radiotelephone installation.

Every vessel subject to Part III of Title III of the Communications Act must have a detailed inspection by the Commission of the prescribed installation once every five years. If after inspection the Commission determines that all relevant provisions of Part III of Title III of the Communications Act, the rules of the Commission, and the station license are met a Communications Act Safety Radiotelephone Certificate will be issued. The effective date of this certificate is the date the installation is found to be in compliance, or not more than one business day later.

§ 80.905 Radiotelephone installation.

(a)(1) The required radiotelephone installation must include a medium frequency transmitter capable of J3E emission and a receiver capable of reception of J3E emission within the band 1605 to 2850 kHz unless the vessel is within communication range of a public coast station or U.S. Coast Guard station operating in the band 156 to 162 MHz which maintains a watch on 156.800 MHz at all times while the vessel is navigated in waters specified in § 80.901, and the vessel is never more than 20 nautical miles from the receiving location of such a station. In that case the radiotelephone installation may include a VHF transmitter and receiver in lieu of the medium frequency equipment.

(2) For a vessel that is navigated within the communication range of a VHF public coast station or U.S. Coast Guard station, but beyond the 20-nautical mile limitation specified in paragraph (a)(1) of this section, an exemption from the band 1605 to 2850 kHz installation requirements may be granted if the vessel is equipped with a VHF transmitter and receiver. An application for exemption must include a chart showing the route of the voyage or the area of operation of the vessel, and the receiving service area of the VHF public coast or U.S. Coast Guard station. The coverage area of the U.S. Coast Guard station must be based on written information from the District Commander, U.S. Coast Guard, a copy of which must be furnished with the application. The coverage area of a public coast station must be computed by the method specified in subpart P of this part.

(b) The radiotelephone installation must be installed to insure safe operation of the equipment and to facilitate repair. It must be protected against the vibration, moisture, temperature, and excessive currents and voltages.

(c) A VHF radiotelephone installation or a remote unit must be located at each steering station except those auxiliary steering stations which are used only during brief periods for docking or for close-in maneuvering. A single portable radiotelephone set meets the requirements of this paragraph if adequate permanent mounting arrangements with suitable power provision and antenna feed are installed at each operator steering station. Additionally, for vessels of more than 100 gross tons, the radiotelephone installation must be located at the level of the main wheelhouse or at least one deck above the vessel's main deck.

§ 80.907 Principal operating position.

The principal operating position of the radiotelephone installation on vessels over 100 gross tons must be in the room from which the vessel is normally steered while at sea. If the station can be operated from any location other than the principal operating position, a positive means must be provided at the principal operating position to take full control of the station.

§ 80.909 Medium frequency transmitter.

(a) The transmitter must have a peak envelope output power of a least 60 watts for J3E emissions on 2182 kHz and at least one ship-to-shore working frequency within the band 1605 to 2850 kHz enabling communication with a public coast station if the region in which the vessel is navigated is served by a public coast station operating in this band.

(b) The transmitter complies with the power output requirement in paragraph (a) of this section when:

(1) The transmitter can be adjusted for efficient use with an actual ship station transmitting antenna meeting the requirements of § 80.923; and

(2) The transmitter has been demonstrated with normal operating voltages applied, of delivering not less than 60 watts peak envelope power for J3E emissions on the frequencies 2182 and 2638 kHz into either an artificial antenna consisting of a series network of 10 ohms effective resistance and 200 picofarads capacitance or an artificial antenna of 50 ohms nominal impedance. An individual demonstration of power output capability of the transmitter, with the radiotelephone installation normally installed on board ship, may be required.

§ 80.911 VHF transmitter.

(a) The transmitter must be capable of transmission of G3E emission on 156.800 MHz, 156.300 MHz, and on the ship-to-shore working frequencies necessary to communicate with public coast stations serving the area in which the vessel is navigated.

(b) The transmitter must be adjusted so that the transmission of speech normally produces peak modulation within the limits 75 percent and 100 percent.

(c) The transmitter must be type accepted to transmit between 20 watts and 25 watts, on each of the frequencies 156.300 MHz, 156.800 MHz and on ship-to-shore public correspondence channels, into 50 ohms effective resistance when operated with a primary supply voltage of 13.6 volts DC.

(d) When an individual demonstration of the capability of the transmitter is necessary the output power requirements prescribed in this paragraph must be met as follows:

(1) Measurements of primary supply voltage and transmitter output power must be made with the equipment drawing energy only from ship's battery;

(2) The primary supply voltage, measured at the power input terminals to the transmitter, and the output power of the transmitter, terminated in a matching artificial load, must be measured at the end of 10 minutes of continuous operation of the transmitter at its full power output.

(3) The primary supply voltage must not be less than 11.5 volts.

(4) The transmitter output power must be not less than 15 watts.

(5) For primary supply voltages, measured in accordance with the procedures of this paragraph, greater than 11.5 volts, but less than 12.6 volts, the required transmitter output power shall be equal to or greater than the value calculated from the formula

$$P=4.375(V)-35.313$$

where V equals the measured primary voltage and P is the calculated output power in watts."

[51 FR 31213, Sept. 2, 1986, as amended at 54 FR 40059, Sept. 29, 1989]

§ 80.913 Radiotelephone receivers.

(a) If a medium frequency radiotelephone installation is provided, the watch receiver must be capable of effective reception of J3E emissions, be connected to the antenna system specified by § 80.923, and be preset to, and capable of accurate and convenient selection of, the frequencies 2182 kHz, 2638 kHz, and the receiving frequency(s) of public coast stations serving the area in which the vessel is navigated.

(b) If a very high frequency radiotelephone installation is provided, the receiver used for maintaining the watch required by § 80.303 must be capable of effective reception of G3E emission, be connected to the antenna system specified by § 80.923 and be preset to, and capable of selection of, the frequencies 156.300 MHz, 156.800 MHz, and the receiving frequency(s) of public coast stations serving the area in which the vessel is navigated.

(c) One or more loudspeakers must be provided to permit reception on 2182 kHz or 156.800 MHz at the principal operating position and at any other place where listening is performed.

(d) Any receiver provided as a part of the radiotelephone installation must have a sensitivity, of 50 microvolts in the case of MF equipment, and 1 microvolt in the case of VHF equipment.

(e) The receiver required in paragraph (a) or (b) of this section must be capable of efficient operation when energized by the main source of energy, and when energized by the reserve source of energy if a reserve source of energy is required by § 80.917.

(f) The sensitivity of a receiver is the strength in microvolts of a signal, modulated 30 percent at 400 Hertz, required at the receiver input to produce an audio output of 50 milliwatts to the loudspeaker with a signal-to-noise ratio of at least 6 decibels. Evidence of a manufacturer's rating or a demonstration of the sensitivity of a required receiver computed on this basis must be furnished upon request of the Commission.

§ 80.915 Main power supply.

(a) There must be readily available for use under normal load conditions a main power supply sufficient to simultaneously energize the radiotelephone transmitter at its required antenna power, and the required receiver. Under this load condition the potential of the main power supply at the power input terminals of the radiotelephone installation must not deviate from its rated potential by more than 10 percent on vessels completed on or after March 1, 1957, nor by more than 15 percent on vessels completed before that date.

(b) When the main power supply consists of batteries, they must be installed as high above the bilge as practicable, secured against shifting with motion of the vessel, and accessible with not less than 10 inches head room.

(c) Means must be provided for adequately charging any batteries used as a main power supply. There must be a device which gives a continuous indication of the rate and polarity of the charging current during charging.

§ 80.917 Reserve power supply.

(a) A vessel of more than 100 gross tons the keel of which was laid after March 1, 1957, must have a reserve power supply located on the same deck as the main wheel house or at least one deck above the vessel's main deck, unless the main power supply is so situated.

(b) The reserve power supply must be independent of the ship's propulsion and of any other electrical system, and be sufficient to simulataneously energize the radiotelephone transmitter at its required output power, and the receiver. The reserve power supply must be available for use at all times.

(c) When the reserve power supply consists of batteries, they must be installed as high above the bilge as practicable, secured against shifting with motion of the vessel, and accessible with not less than 10 inches head room.

(d) The reserve power supply must be located as near the required transmitter and receiver as practicable.

(e) All reserve power supply circuits must be protected from overloads.

(f) Means must be provided for charging any storage batteries used as a reserve power supply for the required radiotelephone installation. There must be a device which will give continuous indication of the rate and polarity of the charging current during charging.

(g) The cooling system of each internal combustion engine used as a part of the reserve power supply must be adequately treated to prevent freezing or overheating consistent with the season and route to be travelled by the particular vessel involved.

§ 80.919 Required capacity.

If either the main or reserve power supply includes batteries, these batteries must have sufficient reserve capacity to permit proper operation of the required transmitter and receiver for at least 3 hours under normal working conditions.

§ 80.921 Proof of capacity.

(a) When directed by a representative of the Commission the vessel must prove by demonstration as prescribed in paragraphs (b), (c), (d) and (e) of this section, that the requirements of § 80.919 are met.

(b) Proof of the ability of a storage battery used as a main or reserve power supply to operate over the 3-hour period established by a discharge test over the prescribed period of time when supplying power at the voltage required for an electrical loss as prescribed by paragraph (d) of this section.

(c) When the required power supply consists of an engine-driven generator, proof of the adequacy of the engine fuel supply to operate the unit over the 3-hour period of time may be established by using as a basis the fuel consumption during a 1 hour period when supplying power, at the voltage required for operating an electrical load as prescribed by paragraph (d) of this section.

(d) In determining the required electrical load the following formula must be used:

(1) One-half of the current of the required transmitter at its rated output power; plus

(2) Current of the required receiver plus

(3) Current of electric light, if required by § 80.925; plus

(4) The sum of the current of all other loads the reserve power supply may provide in time of emergency.

(e) At the conclusion of the test specified in paragraphs (b) and (c) of this section, no part of the main or reserve power supply must have an excessive temperature rise, nor must the specific gravity or voltage of any storage battery be below the 90 percent discharge point.

80.923 Antenna system.

An antenna must be provided in ac-
ordance with the applicable require-
nents of § 80.71 which is as nondirec-
ional and as efficient as practicable
or the transmission and reception of
adio ground waves. The construction
nd installation of this antenna must
nsure proper emergency operation.

80.925 Electric light.

(a) If the vessel is navigated at night
electric light or dial lights which
early illuminate the operating con-
ols must be installed to provide illu-
nation of the operating controls at
e principal operating position.

b) The electric light must be ener-
ed from the main power supply and,
reserve power supply for the radio-
ephone installation is required,
m the reserve power supply.

.927 Antenna radio frequency indicator.

he transmitter must be equipped
a device which provides visual in-
tion whenever the transmitter is
plying power to the antenna.

929 Nameplate.

durable nameplate must be
nted on the required radiotele-
e equipment. When the transmit-
nd receiver comprise a single unit,
nameplate is sufficient. The name-
must show the name of the man-
urer and the type or model
er.

31 Test of radiotelephone installation.

ess normal use of the radiotele-
installation demonstrates that
uipment is in proper operating
ion, a test communication on a
ed frequency in the 1605 to 2850
and or the 156-162 MHz band
be made by a qualified operator
ay the vessel is navigated. If the
nent is not in proper operating
ion, the master must be prompt-
fied.

General exemptions.

ubject U.S. vessels less than 50
ons which are navigated not
han 1,000 feet from the nearest land at mean low tide are exempt from the provisions of Title III, Part III of the Communications Act.

(b) Subject U.S. vessels less than 100 gross tons which are equipped with VHF installations meeting the requirements of this subpart are exempt from the medium frequency radiotelephone requirements if the vessels remain within the effective coverage area of U.S. Coast Guard or public coast stations operating in the band 156-162 MHz when the vessels are:

(1) Navigated in waters contiguous to Hawaii or the Virgin Islands; or

(2) Navigated in waters contiguous to the coast of Southern California from Point Conception south to the U.S. Mexico Border. The Islands of San Miguel, Santa Rosa, Santa Cruz, Anacopa, San Nicolas, Santa Barbara, Santa Catalina and San Clemente are considered to be within these waters.

(c) These exemptions may be terminated at any time without hearing, if in the Commission's discretion, the need for such action arises.

§ 80.935 Station clock.

Each station subject to this subpart must have a working clock or timepiece readily available to the operator.

Subpart T—Radiotelephone Installation Required for Vessels on the Great Lakes

§ 80.951 Applicability.

The Agreement Between the United States of America and Canada for Promotion of Safety on the Great Lakes by Means of Radio, 1973, applies to vessels of all countries when navigated on the Great Lakes. The Great Lakes Radio Agreement defines the Great Lakes as "all waters of Lakes Ontario, Erie, Huron (including Georgian Bay), Michigan, Superior, their connecting and tributary waters and the River St. Lawrence as far east as the lower exit of the St. Lambert Lock at Montreal in the Province of Quebec, Canada," but does not include such of the connecting and tributary waters as may be specified in the Technical Regulations. The Technical Regulations do not include any connecting and tributary waters except the St. Mary's

River, the St. Clair River, Lake St. Clair, the Detroit River and the Welland Canal. A vessel to which the Great Lakes Radio Agreement applies and which falls into the specific categories by paragraph (a), (b) or (c) of this section and not excepted by paragraph (d) or (e) of this section must comply with this subpart while navigated on the Great Lakes.

(a) Every vessel 20 meters (65 feet) or over in length (measured from end to end over the deck, exclusive of sheer).

(b) Every vessel engaged in towing another vessel or floating object, except:

(1) Where the maximum length of the towing vessel, measured from end to end over the deck exclusive of sheer, is less than 8 meters (26 feet) and the length or breadth of the tow, exclusive of the towing line, is less than 20 meters (65 feet);

(2) Where the vessel towed complies with this subpart;

(3) Where the towing vessel and tow are located within a booming ground (an area in which logs are confined); or

(4) Where the tow has been undertaken in an emergency and neither the towing vessel nor the tow can comply with this part.

(c) Any vessel carrying more than six passengers for hire.

(d) The requirements of the Great Lakes Radio Agreement do not apply to:

(1) Ships of war and troop ships;

(2) Vessels owned and operated by any national government and not engaged in trade.

(e) The Commission may if it considers that the conditions of the voyage or voyages affecting safety (including but not necessarily limited to the regularity, frequency and nature of the voyages, or other circumstances) are such as to render full application of the Great Lakes Agreement unreasonable or unnecessary, exempt partially, conditionally or completely, any individual vessel for one or more voyages or for any period of time not exceeding one year.

§ 80.953 Inspection and certification.

Each U.S. flag vessel subject to the Great Lakes Agreement must have an inspection of the required radiotelephone installation not less than once every twelve months. However, a one month extension of an FCC certificate may be granted by the Commission. This inspection must be made while the vessel is in active service or within not more than one month before the date on which it is placed in service. A Great Lakes Agreement Radiotelephony Certificate will be issued to vessels in compliance. The certificate must be posted at the principal operating position of the radiotelephone installation.

§ 80.955 Radiotelephone installation.

(a) Each U.S. flag vessel of less than 38 meters (124 feet) in length while subject to the Great Lakes Agreement must have a radiotelephone meeting the provisions of this subpart in addition to the other rules in this part governing ship stations using telephony.

(b) Each U.S. flag vessel of 38 meters (124 feet) or more in length while subject to the Great Lakes Agreement must have a minimum of two VHF radiotelephone installations in operating condition meeting the provisions of this subpart. The second VHF installation must be electrically separate from the first VHF installation. However, both may be connected to the main power supply provided one installation can be operated from a separate power supply located as high as practicable on the vessel.

(c) This paragraph does not require or prohibit the use of other frequencies for use by the same "radiotelephone installation" for communication authorized by this part.

§ 80.956 Required frequencies and uses.

(a) Each VHF radiotelephone installation must be capable of transmitting and receiving G3E emission as follows:

(1) Channel 16—156.800 MHz-Distress, Safety and Calling; and

(2) Channel 6—156.300 MHz—Primary intership.

(b) The radiotelephone station must have additional frequencies as follows:

(1) Those ship movement frequencies appropriate to the vessel's area of operation: Channel 11—156.550 MHz, Channel 12—156.600 MHz, or Channel 14—156.700 MHz.

(2) The navigational bridge-to-bridge frequency, 156.650 MHz (channel 13).

(3) Such other frequencies as required for the vessel's service.

(4) One channel for receiving marine navigational warnings for the area of operation.

(c) Every radiotelephone station must include one or more transmitters, one or more receivers, one or more sources of energy and associated antennas and control equipment. The radiotelephone station, exclusive of the antennas and source of energy, must be located as high as practicable on the vessel, preferably on the bridge, and protected from water, temperature, and electrical and mechanical noise.

[51 FR 31213, Sept. 2, 1986, as amended at 53 FR 17052, May 13, 1988]

§ 80.957 Principal operating position.

(a) The principal operating position of the radiotelephone installation must be on the bridge, convenient to the conning position.

(b) When the radiotelephone station is not located on the bridge, operational control of the equipment must be provided at the location of the radiotelephone station and at the bridge operating position. Complete control of the equipment at the bridge operating position must be provided.

§ 80.959 Radiotelephone transmitter.

(a) The transmitter must be capable of transmission of G3E emission on the required frequencies.

(b) The transmitter must deliver a carrier power of between 10 watts and 25 watts into 50 ohms nominal resistance when operated with its rated supply voltage. The transmitter must be capable of readily reducing the carrier power to one watt or less.

(c) To demonstrate the capability of the transmitter, measurements of primary supply voltage and transmitter output power must be made with the equipment operating on the vessel's main power supply, as follows:

(1) The primary supply voltage measured at the power input terminals to the transmitter terminated in a matching artificial load, must be measured at the end of 10 minutes of continuous operation of the transmitter at its rated power output.

(2) The primary supply voltage, measured in accordance with the procedures of this paragraph, must be not less than 11.5 volts.

(3) The transmitter at full output power measured in accordance with the procedure of this paragraph must not be less than 10 watts.

§ 80.961 Radiotelephone receiver.

(a) The receiver must be capable of reception of G3E emission on the required frequencies.

(b) The receiver must have a sensitivity of at least 2 microvolts across 50 ohms for a 20 decibel signal-to-noise ratio.

§ 80.963 Main power supply.

(a) A main power supply must be available at all times while the vessel is subject to the requirements of the Great Lakes Radio Agreement.

(b) Means must be provided for charging any batteries used as a source of energy. A device which during charging of the batteries gives a continuous indication of charging current must be provided.

§ 80.965 Reserve power supply.

(a) Each passenger vessel of more than 100 gross tons and each cargo vessel of more than 300 gross tons must be provided with a reserve power supply independent of the vessel's normal electrical system and capable of energizing the radiotelephone installation and illuminating the operating controls at the principal operating position for at least 2 continuous hours under normal operating conditions. When meeting this 2 hour requirement, such reserve power supply must be located on the bridge level or at least one deck above the vessel's main deck.

(b) Instead of the independent power supply specified in paragraph (a) of this section, the vessel may be provided with an auxiliary radiotelephone installation having a power source independent of the vessel's normal electrical system. Any such installation must comply with §§ 80.955, 80.956, 80.957, 80.959, 80.961, 80.969 and 80.971, as well as the general technical standards contained in this part. Additionally, the power supply for any such auxiliary radiotelephone must be a "reserve power supply" for the purposes of paragraphs (c), (d) and (e) of this section.

(c) Means must be provided for adequately charging any batteries used as a reserve power supply for the required radiotelephone installation. A device must be provided which, during charging of the batteries, gives a continuous indication of charging.

(d) The reserve power supply must be available within one minute.

(e) The station licensee, when directed by the Commission, must prove by demonstration as prescribed in paragraphs (e)(1), (2), (3) and (4) of this section that the reserve power supply is capable of meeting the requirements of paragraph (a) of this section as follows:

(1) When the reserve power supply includes a battery, proof of the ability of the battery to operate continuously for the required time must be established by a discharge test over the required time, when supplying power at the voltage required for normal operation to an electric load as prescribed by paragraph (e)(3) of this section.

(2) When the reserve power supply includes an engine driven generator, proof of the adequacy of the engine fuel supply to operate the unit continuously for the required time may be established by using as a basis the fuel consumption during a continuous period of one hour when supplying power, at the voltage required for normal operation, to an electrical load as prescribed by paragraph (e)(3) of this section.

(3) For the purposes of determining the electrical load to be supplied, the following formula must be used:

(i) One-half of the current of the radiotelephone while transmitting at its rated output, plus one-half the current while not transmitting; plus

(ii) Current of the required receiver; plus

(iii) Current of the source of illumination provided for the operating controls prescribed by § 80.969; plus

(iv) The sum of the currents of all other loads to which the reserve power supply may provide power in time of emergency or distress.

(4) At the conclusion of the tests specified in paragraphs (e)(1) and (2) of this section, no part of the reserve power supply must have excessive temperature rise, nor must the specific gravity or voltage of any battery be below the 90 percent discharge point.

§ 80.967 Antenna system.

The antenna must be omnidirectional, vertically polarized and located as high as practicable on the masts or superstructure of the vessel.

§ 80.969 Illumination of operating controls.

(a) The radiotelephone must have dial lights which illuminate the operating controls at the principal operating position.

(b) Instead of dial lights, a light from an electric lamp may be provided to illuminate the operating controls of the radiotelephone at the principal operating position. If a reserve power supply is required, arrangements must permit the use of that power supply for illumination within one minute.

§ 80.971 Test of radiotelephone installation.

At least once during each calendar day a vessel subject to the Great Lakes Radio Agreement must test communications on 156.800 MHz to demonstrate that the radiotelephone installation is in proper operating condition unless the normal daily use of the equipment demonstrates that this installation is in proper operating condition. If equipment is not in operating condition, the master must have it restored to effective operation as soon as possible.

bpart U—Radiotelephone Installations Required by the Bridge-To-Bridge Act

.1001 Applicability.

he Bridge-to-Bridge Act and the ulations of this part apply to the owing vessels in the navigable ers of the United States:

) Every power-driven vessel of 300 s tons and upward while navigat-

) Every vessel of 100 gross tons upward carrying one or more pasers for hire while navigating;

Every towing vessel of 26 feet (7.8 ers) or over in length, measured end to end over the deck excludheer, while navigating; and

Every dredge and floating plant ged, in or near a channel or fair- in operations likely to restrict or t navigation of other vessels. An anned or intermittently manned ing plant under the control of a ge shall not be required to have a ate radiotelephone capability.

003 Station required.

sels subject to the Bridge-to-e Act must have a radiotele- installation to enable the vessel rticipate in navigational commuons. This radiotelephone instal- must be continuously associated the ship even though a portable ation is used. Foreign vessels g into U.S. waters where a -to-bridge station is required ulfill this requirement by use of ble equipment brought a board pilot. Non portable equipment, used, must be arranged to facili-epair. The equipment must be ted against vibration, moisture, rature and excessive currents itages.

5 Inspection of station.

bridge-to-bridge radiotelephone will be inspected on vessels to regular inspections pursu- the requirements of Parts II of Title III of the Communicact, the Safety Convention or eat Lakes Agreement at the the regular inspection. If after spection, the Commission determines that the Bridge-to-Bridge Act, the rules of the Commission and the station license are met, an endorsement will be made on the appropriate document. The validity of the endorsement will run concurrently with the period of the regular inspection. Each vessel must carry a certificate with a valid endorsement while subject to the Bridge-to-Bridge Act. All other bridge-to-bridge stations will be inspected from time to time.

§ 80.1007 Bridge-to-bridge radiotelephone installation.

Use of the bridge-to-bridge transmitter must be restricted to the master or person in charge of the vessel, or the person designated by the master or person in charge to pilot or direct the movement of the vessel. Communications must be of a navigational nature exclusively.

§ 80.1009 Principal operator and operating position.

The principal operating position of the bridge-to-bridge station must be the vessel's navigational bridge or, in the case of dredges, its main control station. If the radiotelephone installation can be operated from any location other than the principal operating position, the principal operating position must be able to take full control of the installation.

§ 80.1011 Transmitter.

The bridge-to-bridge transmitter must be capable of transmission of G3E emission on the navigational frequency 156.650 MHz (Channel 13).

§ 80.1013 Receiver.

The bridge-to-bridge receiver must be capable of reception of G3E emission on 156.650 MHz.

§ 80.1015 Power supply.

(a) There must be readily available for use under normal load conditions, a power supply sufficient to simultaneously energize the bridge-to-bridge transmitter at its required antenna power, and the bridge-to-bridge receiver. Under this load condition the voltage of the power supply at the power input terminals of the bridge-to-bridge radiotelephone installation must not deviate from its rated voltage by more than 10 percent on vessels completed on or after March 1, 1957, nor by more than 15 percent on vessels completed before that date.

(b) When the power supply for a nonportable bridge-to-bridge radiotelephone installation consists of or includes batteries, they must be installed as high above the bilge as practicable, secured against shifting with motion of the vessel, and accessible with not less than 10 inches head room.

(c) Means must be provided for adequately charging any rechargeable batteries used in the vessel's bridge-to-bridge radiotelephone installation. There must be provided a device which will give a continuous indication of the charging current during charging.

§ 80.1017 Antenna system.

(a) An antenna must be provided for nonportable bridge-to-bridge radiotelephone installations which is nondirectional and vertically polarized. The construction and installation of this antenna must insure proper operation in time of an emergency.

(b) In cases where portable bridge-to-bridge equipment is permanently associated with a vessel, the equipment must be provided with a connector for an external antenna of a type capable of meeting requirements of paragraph (a) of this section and § 80.71. The vessel must be equipped with an external antenna meeting requirements of paragraph (a) of this section and § 80.71, capable of use with the portable equipment during a normal listening watch.

§ 80.1019 Antenna radio frequency indicator.

Each nonportable bridge-to-bridge transmitter must be equipped, at each point of control, with a carrier operated device which will provide continuous visual indication when the transmitter is supplying power to the antenna transmission line or, in lieu thereof, a pilot lamp or meter which will provide continuous visual indication when the transmitter control circuits have been placed in a condition to activate the transmitter.

[52 FR 35246, Sept. 18, 1987]

§ 80.1021 Nameplate.

A durable nameplate must be mounted on the required radiotelephone or be an integral part of it. When the transmitter and receiver comprise a single unit, one nameplate is sufficient. The nameplate must show at least the name of the manufacturer and the type or model number.

§ 80.1023 Test of radiotelephone installation.

Unless normal use of the required radiotelephone installation demonstrates that the equipment is in proper operating condition, a test communication for this purpose must be made by a qualified operator each day the vessel is navigated. If the equipment is not in proper operating condition, the master must be promptly notified. The master must have it restored to effective operating condition as soon as possible.

Subpart V—Emergency Position Indicating Radiobeacons (EPIRB's)

§ 80.1051 Scope.

This subpart describes the technical and performance requirements for Classes A, B, C, and S, and Categories 1, 2, and 3 EPIRB stations.

[53 FR 37308, Sept. 26, 1988]

§ 80.1053 Special requirements for Class A EPIRB stations.

(a) A Class A EPIRB station must meet the following:

(1) Float free of a sinking ship;

(2) Activate automatically when it floats free of a sinking ship;

(3) Have an antenna that deploys automatically when the EPIRB activates;

(4) Use A3N emission on a mandatory basis and A3E and N0N emissions on an optional basis on the frequencies 121.500 MHz and 243.000 MHz;

(5) Transmission of A3E or N0N emission must not exceed 90 seconds and must be followed by a transmis-

ion of at least three minutes of A3N mission; each transmission of a synhesized and/or pre-recorded voice nessage must be preceded by the vords "this is a recording";

(6) The effective radiated power nust not be less than 75 milliwatts fter 48 hours of continuous operation nd without replacement or recharge f batteries. The effective radiated ower must be determined according o FCC Bulletin OCE 45.

(7) The types of emissions for PIRBs must be in accordance with hose specified in the Federal Aviation dministration (FAA) Technical tandard Order (TSO) Document SO-C91a titled "Emergency Locator ransmitter (ELT) Equipment" dated pril 29, 1985. TSO-C91a is incorpoated by reference in accordance with U.S.C. 552(a). TSO-C91a may be obained from the Department of Transortation, Federal Aviation Adminisration, Office of Airworthiness, 800 ndependence Avenue, SW., Washingon, DC 20591;

(8) EPIRBs manufactured effective ctober 1, 1988, or in order to satisfy SCG equipment carriage requirenents are either newly installed in a hip station effective April 1, 1989, or egardless of the date of installation re used in a ship station effective ugust 1, 1991, must have in emissions 3N, A3E and N0N a clearly defined arrier frequency distinct from the nodulation sidebands. On 121.500 Hz at least thirty percent of the otal power emitted during each sweep ycle of the audio frequencies (A3N mission) must be contained within 30 Hz of the reference carrier freuency. On 243.000 MHz at least hrity percent of the total power emited during each sweep cycle of the udio frequencies (A3N emission) must e contained within ±60 Hz of the refrence carrier frequency. See TSO-C91a at paragraph (a)(3)(ii). Additionlly, if the type of modulation is hanged the carrier frequency must ot shift more than ±30 Hz from the ixed reference frequency on 121.500 Hz and not more than ±60 Hz on 43.000 MHz. The long term stability f the carrier frequency must comply vith the requirements in § 80.209(a).

(9) Have a visible or audible indicator which clearly shows that the device is operating. The indicator must be activated by the RF output power. The indicator must be protected from damage due to dropping or contact with other objects;

(10) Float in calm water with at least the upper 5 cm (2 in.) of the EPIRB out of the water and the base of the antenna at least 5 cm (2 in.) above the water, with the antenna in a vertical position completely above the water surface;

(11) Be ballasted to right itself from a position of 90 degrees from its upright position in one second or less;

(12) Meet the requirements of paragraphs (a)(1) through (9) of this section after free fall into water 3 times from a height of 18 meters (60 ft.);

(13) Bear a designation that indicates it is a "Class A" EPIRB;

(14) Have a positive means of turning the equipment off. When an on-off switch is employed a guard must be provided to prevent inadvertent operation.

(b) Class A EPIRB's must have a manually activated test switch which must be held in position for test operation and when released return the EPIRB to its normal state. A switch guard must be provided to prevent inadvertent activation. Class A EPIRB's must also have an associated test circuit and an RF output power indicator which in the test position must:

(1) Permit the operator to determine that the unit is operative;

(2) Switch the transmitter output to an artificial antenna equivalent to that of the EPIRB antenna;

(3) Reduce radiation to a level not to exceed 25 microvolts per meter at a distance of 46 meters (150 feet) irrespective of direction.

(c) The power and modulation requirements specified in paragraphs (a)(6), (7) and (8) of this section must be met under the environmental test conditions specified in the RTCA Document DO-183 except that the air temperature limits for testing these devices must be from −20 to +55 degrees Celsius. Tests specified by RTCA with regard to altitude, decompression and overpressure are not applicable to EPIRB stations.

(d) Vacuum tubes are not permitted in EPIRB's. The equipment must meet the requirements after extended periods of inaction while carried in vessels and subjected to the environmental conditions prescribed. Operation into any RF load from open to short must not cause continuing degradation in performance.

(e) The EPIRB must be powered by a battery contained within the transmitter case or in a battery holder that is rigidly attached to the transmitter case. The battery connector must be corrosion resistant and positive in action and must not rely for contact upon spring force alone. The useful life of the battery is the length of time that the battery must be stored under marine environmental conditions without the EPIRB transmitter output power falling below 75 milliwatts prior to 48 hours of continuous operation. The month and year of the battery's manufacture must be permanently marked on the battery and the month and year upon which 50 percent of its useful life will have expired must be permanently marked on both the battery and the outside of the transmitter. The batteries must be replaced if 50 percent of their useful life has expired or if the transmitter has been used in an emergency situation.

(f) The EPIRB must be waterproof and must not be accidentally activated by rain, seaspray, hose wash-down spray or storage in high humidity conditions. Standing water on the outer surface must not significantly affect its performance.

(g) Operating instructions understandable by untrained personnel must be permanently displayed on the equipment.

(h) The exterior of the equipment must have no sharp edges or projections. Means must be provided to fasten the EPIRB to a survival craft or person.

(i) The antenna must be deployable to its designed length and operating position in a foolpoof manner. The antenna must be securely attached to the EPIRB and easy to de-ice. The antenna must be vertically polarized and omnidirectional.

[51 FR 31213, Sept. 2, 1986; 52 FR 35246, Sept. 18, 1987, as amended at 53 FR 8905, Mar. 18, 1988]

§ 80.1055 Special requirements for Class B EPIRB stations.

(a) A Class B EPIRB must meet the following:

(1) The EPIRB must be turned on automatically, as by water activated battery, or manually by an on-off switch. A positive means of turning the equipment off must be provided. Where an on-off switch is employed, a guard must be provided to prevent inadvertent operation;

(2) The equipment must be designed to be deployed, its controls actuated, or its antenna erected, each by a single action task which can be performed by either hand;

(3) Meet the requirements in § 80.1053(a) (4) through (8), (a)(14), and (c) through (i);

(4) Bear a designation that indicates it is a "Class B" EPIRB.

(b) A Class B EPIRB may have a manually activated test switch which meets the requirements in § 80.1053 (b) and (c).

(c) If testing of an EPIRB with Coast Guard coordination is not possible, brief operational tests are authorized provided the tests are conducted within the first five minutes of any hour and are not longer than three audio sweeps or one second whichever is longer.

[51 FR 31213, Sept. 2, 1986; 52 FR 35246, Sept. 18, 1987, as amended at 53 FR 8906, Mar. 18, 1988]

§ 80.1057 Special requirements for Class C EPIRB stations.

(a) A Class C EPIRB must operate on the frequencies 156.750 and 156.800 MHz, must use G3N modulation, and employ the international Radiotelephone Two Tone Alarm signal. The EPIRB transmission must be cycled. Each cycle must consist of 6 periods (T1 to T6) as shown in the table below. During T1, T2, T3, and T5 the 156.750 MHz and 156.800 MHz carriers must be modulated alternately by a 2200 Hz and a 1300 Hz tone.

The modulating duration of each tone must be 250 milliseconds. The maximum toler-

f the frequency and modulating dura-
of each tone must be ±5 percent.
g T4 and T6 neither of the RF carri-
ist be emitted. The T4 and T6 time pe-
nust be varied according to the prede-
ed schedule shown in the table below.
the last cycle the transmissions must
minated. The EPIRB must be able to
e its transmissions in accordance to
hedule shown in the table below by
g the activation switch to the "off'
en "on" position.

Duration in seconds	Transmission frequency in MHz
1.5	156.800
14.5	156.750
1.5	156.800
40.0 (16 cycles)	None.
80.0 (32 cycles)	
160.0 (64.2 cycles)	
320.0 (83.2 cycles)	
14.5	156.750
Sames as T_4 duration	None.

The effective radiated power
not be less than 1 watt. The
must be determined according
Bulletin OCE 45. The EPIRB
neet the power requirements
ch of the following tempera-
nges for the time period shown
Batteries may be replaced after
ion of tests for each tempera-
ge:

to +50 degrees Celsius for 24
ontinuous operation.

20 to 0 degrees Celsius for 12
ontinuous operation.

he equipment must have a
tter, an integral antenna and a
supply. The transmitter and
upply must be in separate com-
ts in a single watertight case.
e equipment must be provided
visible or audible indicator
early shows the device is oper-
he indicator must be activated
F output power.

ne equipment must operate
nd held or when floating in
ter storage for extended peri-
r marine environmental con-

e switch used to activate the
must indicate the state of the
nt (on-off) by the physical po-
the switch. A guard must be
to prevent inadvertent oper-

(g) The equipment case must be waterproof and resealable without special tools or sealing compounds. EPIRB operation must not be degraded by submersion in sea water for a period of 24 hours.

(h) The EPIRB must float in fresh water with the antenna vertical and completely out of the water.

(i) Vacuum tubes are not permitted in EPIRB's. The EPIRB must meet the requirements after extended periods of inaction while carried in vessels and subjected to marine environmental conditions. Operation into any load from open to short must not result in continuous degradation of performance.

(j) The exterior of the equipment must have no sharp edges or projections. Means must be provided to secure the EPIRB to a survival craft or person.

(k) Operating instructions understandable by untrained personnel must be permanently displayed on the equipment. It must indicate that the device is "to be used solely for distress purposes."

(l) The equipment must have no exposed areas or terminals that could ignite flammable gases or materials.

(m) The omndirectional antenna must be securely attached to the case and capable of being stowed without being damaged.

(n) The equipment must meet the technical standards after being dropped into water from a height of 6 meters (20 feet).

(o) The EPIRB must meet the technical standards when plunged into sea water at +20 degrees Celsius after storage at a temperature of +50 degrees Celsius.

(p) If testing of an EPIRB with Coast Guard coordination is not possible, brief operational tests are authorized provided the tests are conducted within the first five minutes of any hour for not more than 10 seconds.

(q) The EPIRB must automatically turn off after 24 hours ±5 percent. It must be possible to restart the transmission sequence by placing the on-off switch momentarily in the off position and returning it to the on position.

(r) The EPIRB must be equipped with a visual indication of a low battery condition.

(s) The EPIRB must have a designation that indicates it is a "Class C" EPIRB.

§ 80.1059 Special requirements for Class S EPIRB stations.

(a) A Class S EPIRB station must be able to float or be permanently secured to a survival craft.

(b) A Class S EPIRB able to float must meet the following:

(1) Be watertight and float in calm water with at least 5 cm (2 in.) of the EPIRB out of the water and the base of the antenna at least 5 cm (2 in.) above the water, with the antenna in a vertical position completely above the water surface;

(2) Be ballasted to right itself from a position 90 degrees from its upright position in one second or less;

(3) Meet the requirements in § 80.1053 (a)(4) through (9) after free fall into water 3 times from a height of 20 meters (67 ft.).

(c) A Class S EPIRB intended to be permanently secured to a survival craft is not required to float in water.

(d) Additionally, all Class S EPIRB's must meet the following:

(1) Be capable only of manual activation by an on-off switch protected by a guard to prevent inadvertent operation;

(2) Be designed to be deployed, its controls actuated, or its antenna erected, each by a single action task which can be performed by either hand;

(3) Meet the requirements in § 80.1053 (a)(4) through (a)(7) and (b) through (i);

(4) Class S EPIRB's may provide either continuous or intermittent operation. If designed for intermittent operation, the duty cycle must be 50 percent and the period two minutes ± 12 seconds.

(5) If testing of an EPIRB with Coast Guard coordination is not possible, brief operational tests are authorized provided the tests are conducted within the first five minutes of any hour and are not longer than three audio sweeps or one second whichever is longer;

(6) Have a designation that indicates it is a "Class S" EPIRB.

(e) Applications for type acceptance must include a letter from the manufacturer stating that the EPIRB meets the requirements in paragraphs (b) and (d), or (c) and (d) of this section.

§ 80.1061 Special requirements for 406.025 MHz EPIRBs.

(a) Notwithstanding the provisions in paragraph (b) of this section, 406.025 MHz EPIRBs must meet all the technical and performance standards contained in the Radio Technical Commission for Maritime Services document titled "RTCM Recommended Standards for 406 MHz Satellite Emergency Position-Indicating Radiobeacons (EPIRBs)" dated July 31, 1987, with editorial updates of December 31, 1987 (RTCM Recommended Standards). This RTCM document is incorporated by reference in accordance with 5 U.S.C. 552(a). The document is available for inspection at Commission headquarters in Washington, DC or may be obtained from the Radio Technical Commission for Maritime Services, Post Office Box 19087, Washington, DC 20036.

(b) The 406.025 MHz EPIRB must contain as an integral part a "homing" beacon operating only on 121.500 MHz that meets all the requirements described in the RTCM Recommended Standards document described in paragraph (a) of this section. The 121.500 MHz "homing" beacon must have a continuous duty cycle that may be interrupted during the transmission of the 406.025 MHz signal only.

(c) Prior to submitting a type acceptance application for a 406 MHz radiobeacon, the radiobeacon must be certified by a test facility recognized by one of the COSPAS/SARSAT Partners that the equipment satisfies the design characteristics associated with the measurement methods described in Appendix B of the RTCM Recommended Standards.
Additionally, the radiobeacon must be certified by a test facility recognized by the U.S. Coast Guard to certify that the equipment complies with the U.S. Coast Guard environmental and operational requirements associated

ith the test procedures described in ppendix A of the RTCM Recom- ended Standards. Information re- arding the recognized test facilities ay be obtained from Commandant G-MVI), U.S. Coast Guard, 2100 2nd treet SW., Washington, DC 20593- 001.

(1) After a 406.025 MHz EPIRB has een certified by the recognized test cilities the following information ust be submitted in duplicate to the ommandant (G-MVI), U.S. Coast uard, 2100 2nd Street SW., Washing- n, DC 20593-0001:

(i) The name of the manufacturer or antee and model number of the PIRB;

(ii) Copies of the certificate and test ta obtained from the test facility cognized by a COSPAS/SARSAT rtner showing that the radiobeacon mplies with the COSPAS/SARSAT sign characteristics associated with e measurement methods described Appendix B of the RTCM Recom- ended Standards;

iii) Copies of the test report and st data obtained from the test facili- recognized by the U.S. Coast Guard owing that the radiobeacon com- es with the U.S. Coast Guard envi- nmental and operational character- ics associated with the measurement thods described in Appendix A of e RTCM Recommended Standards; d

iv) Instruction manuals associated h the radiobeacon, description of e test characteristics of the radio- acon including assembly drawings, ctrical schematics, description of rts list, specifications of materials d the manufacturer's quality assur- ce program.

2) After reviewing the information cribed in paragraph (c)(1) of this tion the U.S. Coast Guard will issue etter stating whether the radiobea- n satisfies all RTCM Recommended ndards.

d) A type acceptance application for 406.025 MHz EPIRB submitted to Commission must also contain a y of the U.S. Coast Guard letter t states the radiobeacon satisfies RTCM Recommended Standards, a y of the technical test data, and instruction manual(s).

(e) An identification code, issued by the National Oceanic and Atmospheric Administration (NOAA), the United States Program Manager for the 406.025 MHz COSPAS/SARSAT satellite system, must be programmed in each EPIRB unit to establish a unique identification for each EPIRB station. With each marketable EPIRB unit the manufacturer or grantee must include postage pre-paid registration card addressed to: NOAA, NESDIS, USMCC Data Base Manager, Federal Building 4, Washington, DC 20233. The registration card must include the EPIRB identification code and must request the owner's name, address, telephone number and type of ship.

(f) To enhance protection of life and property it is imperative that each 406.025 MHz EPIRB be registered with NOAA. Therefore, in addition to the identification plate or label requirements contained in §§ 2.925, 2.926, and 2.1003 of the Commission's Rules, each 406.025 MHz EPIRB must be provided on the outside with a clearly discernible permanent plate or label containing the following statement: "It is extremely important that the owner of this 406.025 MHz EPIRB registers the NOAA identification code contained on this label with the National Oceanic and Atmospheric Administration (NOAA) whose address is: NOAA, NESDIS, USMCC Data Base Manager, Federal Building 4, Washington, DC 20233."

(g) For 406.025 MHz EPIRBs whose identification code can be changed after manufacture, the identification code shown on the plate or label must be easily replaceable using commonly available tools.

[53 FR 37308, Sept. 26, 1988]

Subpart W—Global Maritime Distress and Safety System (GMDSS) [Reserved]

Subpart X—Voluntary Radio Installations

GENERAL

§ 80.1151 Voluntary radio operations.

Voluntary ships must meet the rules applicable to the particular mode of operation as contained in the following subparts of this part and as modified by § 80.1153:

Operating Requirements and Procedures—Subpart C
Equipment Technical Requirements—Subpart E
Frequencies—Subpart H

§ 80.1153 Station log and radio watches.

(a) Licensees of voluntary ships are not required to operate the ship radio station or to maintain radio station logs.

(b) When a ship radio station of a voluntary ship is being operated, appropriate general purpose watches must be maintained in accordance with §§ 80.146, 80.147 and 80.148.

VOLUNTARY TELEGRAPHY

§ 80.1155 Radioprinter.

Radioprinter operations provide record communications between authorized maritime mobile stations.

(a) *Supplementary eligibility requirements.* Ships must be less than 1600 gross tons.

(b) *Scope of communication.* (1) Ship radioprinter communications may be conducted with an associated private coast station.

(2) Ships authorized to communicate by radioprinter with a common private coast station may also conduct intership radioprinter operations.

(3) Only those communications which are associated with the business and operational needs of the ship are authorized.

(c) *Assignment and use of frequencies.* (1) Frequencies for radioprinter operations are shared by several radio services including the maritime mobile service.

(2) Ship stations must conduct radioprinter operations only on frequencies assigned to their associated private coast station for that purpose.

(d) *Authorization procedure.* The authorization procedure for ship station radioprinter operations is as follows:

(1) The associated private coast station must submit an application for specific radioprinter frequencies and provide the names of ships to be served.

(2) When the private coast station receives a radioprinter license, it must provide copies of their license to all ships with which they are authorized to conduct radioprinter operations. The private coast station license copy must be kept as part of the ship station license.

(3) Any addition or deletion of ships must be notified to the Commission by letter.

§ 80.1157 Facsimile.

Facsimile is a form of telegraphy for the transmission and receipt of fixed images. Ships must use facsimile techniques only with authorized public coast stations.

§ 80.1159 Narrow-band direct-printing (NB-DP).

NB-DP is a form of telegraphy for the transmission and receipt of direct printing public correspondence. Ships must use NB-DP techniques only with authorized public coast stations.

§ 80.1161 Emergency position indicating radiobeacon (EPIRB).

EPIRB transmissions must be used only under emergency conditions. The various classes of EPIRB's are described in subpart V of this part.

VOLUNTARY TELEPHONY

§ 80.1165 Assignment and use of frequencies.

Frequencies for general radiotelephone purposes are available to ships in three radio frequency bands. Use of specific frequencies must meet the Commission's rules concerning the scope of service and the class of station with which communications ar intended. The three frequency bands are:

(a) *156-158 MHz (VHF/FM Radiotelephone).* Certain frequencies within this band are public correspondence frequencies and they must be used as working channels when communicating with public coast stations. Other working frequencies within the band are categorized by type of communications for which use is authorized when communicating with a private coast station or between ships. Subpart H of this part lists the frequencies and types of communications for which they are available.

(b) *1600-4000 kHz (SSB Radiotelephone).* Specific frequencies within this band are authorized for single sideband (SSB) communications with public and private coast stations or between ships. The specific frequencies are listed in subpart H of this part.

(c) *4000-23000 kHz (SSB Radiotelephone).* Specific frequencies within this band are authorized for SSB communications with public and private coast stations. The specific frequencies are listed in subpart H of this part.

AUTOMATED SYSTEMS

§ 80.1169 Automated Maritime Telecommunications System (AMTS).

(a) AMTS is an automated, integrated communication system along the Mississippi River and connecting waterways, the Gulf Intracoastal Waterway, and the offshore waters of the Gulf of Mexico.

(b) Each application for a ship station or fleet license to operate in the AMTS must be accompanied by a letter from the AMTS coast station licensee stating that business arrangements have been completed for the provision of service.

§ 80.1171 Assignment and use of frequencies.

(a) The frequencies assignable to AMTS stations are listed in § 80.385(a). These frequencies are assignable to ship and coast stations for voice, facsimile and radioteletypewriter communications.

ON-BOARD COMMUNICATIONS

§ 80.1175 Scope of communications of on-board stations.

(a) On-board stations communicate:

(1) With other units of the same station for operational communications on the ship.

(2) With on-board stations of another ship or shore facility to aid in oil pollution prevention during the transfer of 250 or more barrels of oil.

(3) With other units of the same station in the immediate vicinity of the ship for operational communications related to docking, life boat and emergency drills or in the maneuvering of cargo barges and lighters.

(b) An on-board station may communicate with a station in the Business Radio Service operating on the same frequency when the vessel on which the on-board station is installed is alongside the dock or cargo handling facility.

§ 80.1177 Assignment and use of frequencies.

On-board frequencies are assignable only to ship stations. When an on-board repeater is used, paired frequencies must be used. On-board repeater frequencies must be used for single frequency simplex operations. On-board frequencies are listed in subpart H.

§ 80.1179 On-board repeater limitations.

When an on-board repeater is used, the following limitations must be met:

(a) The on-board repeater antenna must be located no higher than 10 feet above the vessel's highest working deck.

(b) Each on-board repeater must have a timer that deactivates the transmitter if the carrier remains on for more than 3 minutes.

§ 80.1181 Station identification.

(a) On-board stations must identify when:

(1) The vessel is within 20 miles of any coastline; or

(2) The communications are likely to be received aboard another vessel.

(b) Identification, when required, must be:

(1) Transmitted at the beginning and the end of a series of communications. Whenever communications are sustained for a period exceeding 15 minutes, station identification must be transmitted at intervals not exceeding 15 minutes.

(2) In English and must include the name of the vessel, followed by a number or name designating the respective mobile unit, for example: "S.S. United States Mobile One, this is Mobile Two."

§ 80.1183 Remote control for maneuvering or navigation.

(a) An on-board station may be used for remote control of maneuvering or navigation control systems aboard the same ship or, where that ship is towing a second ship, aboard the towed ship.

(b) The remote control system transmissions must contain a synchronization signal and a message signal composed of a documentation number group, a company control group, an actuation instruction group, and a termination of transmission group.

(1) The synchronization signal must be the control character "SYN", transmitted twice.

(2) The message signal is composed of the following groups:

(i) The documentation number group must be transmitted once and be the ship's U.S. Coast Guard documentation number or, if the ship is not documented, the call sign of the on-board station.

(ii) The company control group, composed of three letters taken from AAA through ZZZ, which must be transmitted one time.

(iiii) The actuation instruction group, composed of two letters taken from AA through ZZ, which must be transmitted one time.

(iv) The termination of transmission group, composed of the control character "EM", which must be transmitted twice.

(c) The receiving system must:

(1) Reject any actuation instruction until it recognizes and accepts the company control group.

(2) Reject any company control group until it recognizes and accepts the documentation number group.

(d) The emission employed must be G2D. The provisions applicable to G3E emission are also applicable to G2D emission.

(e) The binary information must be applied to the carrier as frequency-shift keying (FSK) of the standard tones 1070 and 1270 Hz. "0" (low) must correspond to 1070 Hz and "1" (high) must correspond to 1270 Hz. The signalling rate must be 300 bits per second.

(f) The alphabet employed must be the United States of America Standard Code for Information Interchange (USASCII), contained in the United States of America Standards Institute publication USAS X3.4-1968.

(1) The bit sequence must be least significant bit first to most significant bit (bit 1 through 7), consecutively.

(2) The character structure must consist of 8 bits (seven bits plus one character parity bit) having equal time intervals.

(3) "Odd" parity is required.

MOBILE-SATELLITE STATIONS

§ 80.1185 Supplemental eligibility for mobile-satellite stations.

Stations in the maritime mobile-satellite service must meet the eligibility requirements contained in this section.

(a) A station license for a ship earth station may be issued to:

(1) The owner or operator of a ship.

(2) A corporation proposing to furnish a nonprofit radio communication service to its parent corporation, to another subsidiary of the same parent, or to its own subsidiary, where the party to be served is the owner or operator of the ship aboard which the ship earth station is to be installed and operated.

(b) A station license for a portable ship earth station may be issued to the owner or operator of portable earth station equipment proposing to furnish satellite communication service on board more than one ship or fixed offshore platform located in the marine environment.

[52 FR 27003, July 17, 1987, as amended at 5 FR 49995, Dec. 4, 1989]

.1187 Scope of communication.

hip earth stations must be used for
ecommunications related to the
iness or operation of ships and for
lic correspondence of persons on
rd. Portable ship earth stations are
horized to meet the business, oper-
nal and public correspondence
communication needs of fixed off-
re platforms located in the marine
ironment as well as ships. The
es of emission are determined by
INMARSAT organization.

FR 27003, July 17, 1987]

1189 Portable ship earth stations.

) Portable ship earth stations are
horized to operate on board more
n one ship. Portable ship earth sta-
s are also authorized to be operat-
on board fixed offshore platforms
ted in international or United
es domestic waters.

) Portable ship earth stations must
t the rule requirements of ship
h stations with the exeception of
bility.

Where the license of the portable
earth station is not the owner of
ship or fixed platform on which
station is located, the station must
perated with the permission of the
er or operator of the ship or fixed
form.

R 27003, July 17, 1987]

RADIODETERMINATION

**201 Special provisions for cable-
epair ship stations.**

A ship station may be authorized
se radio channels in the 285-315
band in Region 1 and 285-325 kHz
y other region for cable repair ra-
etermination purposes under the
wing conditions:

The radio transmitting equip-
attached to the cable-marker
associated with the ship station
be described in the station appli-
n;

The call sign used for the trans-
r operating under the provisions
is section is the call sign of the
station followed by the letters
and the identifying number of
uoy.

(3) The buoy transmitter must be continuously monitored by a licensed radiotelegraph operator on board the cable repair ship station; and

(4) The transmitter must operate under the provisions in § 80.375(b).

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AUTHORITY: 48 Stat. 1066, 1082, as amended; 47 U.S.C. 154, 303, unless otherwise noted. Interpret or apply 48 Stat. 1064-1068, 1081-1105, as amended; 47 U.S.C. 151-156, 301-609.

SOURCE: 53 FR 28940, Aug. 1, 1988, unless otherwise noted.

Subpart A—General Information

§ 87.1 Basis and purpose.

This section contains the statutory basis and provides the purpose for which this part is issued.

(a) *Basis.* The rules for the aviation services in this part are promulgated under the provisions of the Communications Act of 1934, as amended, which vests authority in the Federal Communications Commission (Commission) to regulate radio transmission and to issue licenses for radio stations. These rules conform with applicable statutes and international treaties, agreements and recommendations to which the United States is a party. The most significant of these documents are listed with the short title appearing in pa- entheses:

(1) Communications Act of 1934, as amended—(Communications Act).

(2) International Telecommunica- ion Union Radio Regulations, in force or the United States—(Radio Regula- ions).

(3) The Convention on International ivil Aviation—(ICAO Convention).

(b) *Purpose.* This part states the onditions under which radio stations ay be licensed and used in the avia- on services. These rules do not overn U.S. Government radio sta- ons.

87.3 Other applicable rule parts.

Other applicable CFR title 47 parts clude:

(a) Part 0 contains the Commission's ganizations and delegations of au- ority. Part 0 also lists Commission blications, standards and procedures r access to Commission records and cation of Commission monitoring ations.

b) Part 1 contains rules of practice d procedure for license applications, judicatory proceedings, rule making proceedings, procedures for reconsideration and review of the Commission's actions, provisions concerning violation notices and forfeiture proceedings, and the requirements for environmetal impact statements.

(c) Part 2 contains the Table of Frequency Allocations and special requirements in international regulations, recommendations, agreements, and treaties. This part also contains standards and procedures concerning marketing of radio frequency devices, and for obtaining equipment authorization.

(d) Part 13 contains information and rules for the licensing of commercial radio operators.

(e) Part 17 contains requirements for construction, marking and lighting of antenna towers.

(f) Part 80 contains rules for the maritime services. Certain maritime frequencies are available for use by aircraft stations for distress and safety, public correspondence and operational communications.

§ 87.5 Definitions.

Aeronautical advisory station (unicom). An aeronautical station used for advisory and civil defense communications primarily with private aircraft stations.

Aeronautical enroute station. An aeronautical station which communicates with aircraft stations in flight status or with other aeronautical enroute stations.

Aeronautical fixed service. A radiocommunication service between specified fixed points provided primarily for the safety of air navigation and for the regular, efficient and economical operation of air transport. A station in this service is an aeronautical fixed station.

Aeronautical Mobile Off-Route (OR) Service. An aeronautical mobile service intended for communications, including those relating to flight coordination, primarily outside national or international civil air routes.(RR)

Aeronautical Mobile Route (R) Service. An aeronautical mobile service reserved for communications relating to safety and regularity of flight, primarily along national or international civil air routes.(RR)

Aeronautical Mobile-Satellite Off-Route (OR) Service. An aeronautical mobile-satellite service intended for communications, including those relating to flight coordination, primarily outside national and international civil air routes.(RR)

Aeronautical Mobile-Satellite Route (R) Service. An aeronautical mobile-satellite service reserved for communications relating to safety and regularity of flights, primarily along national or international civil air routes.(RR)

Aeronautical mobile service. A mobile service between aeronautical stations and aircraft stations, or between aircraft stations, in which survival craft stations may also participate; emergency position-indicating radiobeacon stations may also participate in this service on designated distress and emergency frequencies.

Aeronautical multicom station. An aeronautical station used to provide communications to conduct the activities being performed by, or directed from, private aircraft.

Aeronautical radionavigation service. A radionavigation service intended for the benefit and for the safe operation of aircraft.

Aeronautical search and rescue station. An aeronautical station for communication with aircraft and other aeronautical search and rescue stations pertaining to search and rescue activities with aircraft.

Aeronautical station. A land station in the aeronautical mobile service. In certain instances an aeronautical station may be located, for example, on board ship or on a platform at sea.

Aeronautical utility mobile station. A mobile station used on airports for communications relating to vehicular ground traffic.

Air carrier aircraft station. A mobile station on board an aircraft which is engaged in, or essential to, the transportation of passengers or cargo for hire.

Aircraft station. A mobile station in the aeronautical mobile service other than a survival craft station, located on board an aircraft.

Airport. An area of land or water that is used or intended to be used for the landing and takeoff of aircraft, and includes its buildings and facilities, if any.

Airport control tower (control tower) station. An aeronautical station providing communication between a control tower and aircraft.

Automatic weather observation station. A land station located at an airport and used to automatically transmit weather information to aircraft.

Aviation service organization. Any business firm which maintains facilities at an airport for the purposes of one or more of the following general aviation activities: (a) Aircraft fueling; (b) aircraft services (e.g. parking, storage, tie-downs); (c) aircraft maintenance or sales; (d) electronics equipment maintenance or sales; (e) aircraft rental, air taxi service or flight instructions; and (f) baggage and cargo handling, and other passenger or freight services.

Aviation services. Radio-communication services for the operation of aircraft. These services include aeronautical fixed service, aeronautical mobile service, aeronautical radiodetermination service, and secondarily, the handling of public correspondence on frequencies in the maritime mobile and maritime mobile satellite services to and from aircraft.

Aviation support station. An aeronautical station used to coordinate aviation services with aircraft and to communicate with aircraft engaged in unique or specialized activities. (See Subpart K)

Civil Air Patrol station. A station used exclusively for communications of the Civil Air Patrol.

Emergency locator transmitter (ELT). A transmitter of an aircraft or a survival craft actuated manually or automatically that is used as an alerting and locating aid for survival purposes.

Emergency locator transmitter (ELT) test station. A land station used for testing ELTs or for training in the use of ELTs.

Expendable Launch Vehicle (ELV). A booster rocket that can be used only once to launch a payload, such as a missile or space vehicle.

ght test aircraft station. An air-
station used in the testing of air-
or their major components.

ght test land station. An aeronau-
station used in the testing of air-
or their major components.

de path station. A radionaviga-
land station which provides verti-
guidance to aircraft during ap-
h to landing.

trument landing system (*ILS*). A
navigation system which provides
ft with horizontal and vertical
nce just before and during land-
nd, at certain fixed points, indi-
the distance to the reference
of landing.

trument landing system glide
A system of vertical guidance
died in the instrument landing
n which indicates the vertical de-
n of the aircraft from its opti-
path of descent.

rument landing system localizer.
tem of horizontal guidance em-
l in the instrument landing
n which indicates the horizontal
ion of the aircraft from its opti-
path of descent along the axis of
nway or along some other path
used as an offset.

d station. A station in the
e service not intended to be used
in motion.

lizer station. A radionavigation
tation which provides horizontal
ce to aircraft with respect to a
y center line.

ker beacon station. A radionavi-
land station in the aeronautical
avigation service which employs
ker beacon. A marker beacon is a
itter which radiates vertically a
tive pattern for providing posi-
formation to aircraft.

n power (*of a radio transmitter*).
erage power supplied to the an-
transmission line by a transmit-
ring an interval of time suffi-
long compared with the lowest
ncy encountered in the modula-
aken under normal operating
ons.

owave landing system. An in-
nt landing system operating in
crowave spectrum that provides
and vertical guidance to air-
having compatible avionics
ent.

Mobile service. A radiocommunication service between mobile and land stations, or between mobile stations. A mobile station is intended to be used while in motion or during halts at unspecified points.

Operational fixed station. A fixed station, not open to public correspondence, operated by and for the sole use of persons operating their own radiocommunication facilities in the public safety, industrial, land transportation, marine, or aviation services.

Peak envelope power (*of a radio transmitter*). The average power supplied to the antenna transmission line by a transmitter during one radio frequency cycle at the crest of the modulation envelope taken under normal operating conditions.

Private aircraft station. A mobile station on board an aircraft not operated as an air carrier. A station on board an air carrier aircraft weighing less than 12,500 pounds maximum certified takeoff gross weight may be licensed as a private aircraft station.

Racon station. A radionavigation land station which employs a racon. A racon (radar beacon) is a transmitter-receiver associated with a fixed navigational mark, which when triggered by a radar, automatically returns a distinctive signal which can appear on the display of the triggering radar, providing range, bearing and identification information.

Radar. A radiodetermination system based upon the comparison of reference signals with radio signals reflected, or re-transmitted, from the position to be determined.

Radio altimeter. Radionavigation equipment, on board an aircraft or spacecraft, used to determine the height of the aircraft or spacecraft above the Earth's surface or another surface.

Radiobeacon station. A station in the radionavigation service the emissions of which are intended to enable a mobile station to determine its bearing or direction in relation to the radiobeacon station.

Radiodetermination service. A radiocommuncation service which uses radiodetermination. Radiodetermination is the determination of the position, velocity and/or other characteristics of an object, or the obtaining of information relating to these parameters, by means of the propagation of radio waves. A station in this service is called a radiodetermination station.

Radiolocation service. A radiodetermination service for the purpose of radiolocation. Radiolocation is the use of radiodetermination for purposes other than those of radionavigation.

Radionavigation land test stations. A radionavigation land station which is used to transmit information essential to the testing and calibration of aircraft navigational aids, receiving equipment, and interrogators at predetermined surface locations. The Maintenance Test Facility (MTF) is used primarily to permit maintenance testing by aircraft radio service personnel. The Operational Test Facility (OTF) is used primarily to permit the pilot to check a radionavigation system aboard the aircraft prior to takeoff.

Radionavigation service. A radiodetermination service for the purpose of radionavigation. Radionavigation is the use of radiodetermination for the purpose of navigation, including obstruction warning.

Re-usable launch vehicle (RLV). A booster rocket that can be recovered after launch, refurbished and relaunched.

Surveillance radar station. A radionavigation land station in the aeronautical radionavigation service employing radar to display the presence of aircraft within its range.

Survival craft station. A mobile station in the maritime or aeronautical mobile service intended solely for survival purposes and located on any lifeboat, life raft or other survival equipment.

VHF Omni directional range station (VOR). A radionavigation land station in the aeronautical radionavigation service providing direct indication of the bearing (omni-bearing) of that station from an aircraft.

[53 FR 28940, Aug. 1, 1988, as amended at 54 FR 11719, Mar. 22, 1989; 54 FR 49995, Dec. 4, 1989; 55 FR 4175, Feb. 7, 1990]

Subpart B—Applications and Lic

§ 87.17 Scope.

This subpart contains the p
dures and requirements for the
of applications for radio statio
censes in the aviation services. P
of the Commission's rules contain
general rules of practice and p
dure applicable to proceedings b
the Commission.

§ 87.19 Basic eligibility.

(a) *General.* Foreign governmen
their representatives cannot hold
tion licenses.

(b) *Aeronautical enroute and*
nautical fixed stations. The follo
persons cannot hold an aeronau
enroute or an aeronautical fixed
tion license.

(1) Any alien or the representa
of any alien;

(2) Any corporation organized u
the laws of any foreign governmen

(3) Any corporation of which an
ficer or director is an alien;

(4) Any corporation of which m
than one-fifth of the capital stoc
owned of record or voted by alien
their representatives or by a for
government or its representative, o
a corporation organized under
laws of a foreign country; or

(5) Any corporation directly or i
rectly controlled by any other corp
tion of which more than one-fourt
the capital stock is owned of recor
voted by aliens, their representati
or by a foreign government or its
resentatives, or by any corporation
ganized under the laws of a fore
country, if the Commission finds t
the public interest will be served
the refusal or revocation of such
cense.

§ 87.21 Standard forms to be used.

(a) Applications must be submit
on prescribed forms which may be
tained from the Commission in Wa
ington, DC 20554 or from any of
field offices.

(b) The following table indicates t
correct standard form or other mea
to be used when submitting an app
cation:

Class of station	Application for—	Use—
Aircraft	New license	FCC Form 404.
	Fleet license (new)	FCC Form 404.
	Modification of license.	FCC Form 404.
	Renewal of license with modification.	FCC Form 404
	Renewal of license without modification.	FCC Form 405-B.
	Temporary operating authority in conjunction with application for a new license or modification of license.	FCC Form 404-A.
	Transfer of control of corporation.	FCC Form 703.
	Special Temporary authority.	Letter/Telegram.
	Name or address change.	Letter.
Ground	New license	FCC Form 406.
	Modification of license.	FCC Form 406.
	Renewal of license with modification.	FCC Form 406.
	Renewal of license without modification.	FCC Form 405-A.
	Assignment of license.	FCC Form 1046 and 406.
	Transfer of control of corporation.	FCC Form 703.
	Special Temporary Authority.	Letter/Telegram.
Civil Air Patrol.	New license	FCC Form 480.
	Modification of license.	FCC Form 480.
	Renewal of license	FCC Form 480.

§ 87.23 Supplemental information required.

(a) To minimize harmful interference at the National Radio Astronomy Observatory site at Green Bank, Pocahontas County, WV, and at the Naval Radio Research Observatory site at Sugar Grove, Pendleton County, WV, an applicant for a new station license (other than mobile, temporary base, temporary fixed or Civil Air Patrol), or for modification of an existing license to change the frequency, power, antenna location, height or directivity within the area bounded by 39′15′N. on the north, 78′30′W. on the east, 37′30′N on the south and 80′30′W on the west, must first notify the Director, National Radio Astronomy Observatory, Attn: Interference Office, Post Office Box No. 2, Green Bank, WV 24944, in writing, of the geographical coordinates of the antenna, antenna height, antenna directivity, frequency, emission and power. The application to the Commission must show the date notification was made to the Observatory. The Commission will allow twenty (20) days after receipt of its copy of the notification for comments or objections. If a timely response is received, the Commission will consider the comments or objections.

(b) Geographical coordinates of Commission facilities which require protection are listed in § 0.121(c). Applications for stations (except mobile stations) which will be located within 80 km (50 miles) of the referenced coordinates are examined to determine extent of possible interference. A clause protecting the monitoring station may be added to the station license.

(c) Each application for a station license to operate in the vicinity of Boulder County, CO, under this part must give due consideration, prior to filing applications, to the need to protect the Table Mountain Radio Receiving Zone from harmful interference. These are the Research Laboratories of the Department of Commerce, Boulder County, CO. To prevent degradation of the present ambient radio signal level at the site, the Department of Commerce seeks to ensure that field strength at 40°07′50″N latitude, 105° 14′40″W longitude, resulting from new assignments (other than mobile stations) or from the modification or relocation of the existing facilities do not exceed the following values:

Frequency range	Field strength (mV/m) in authorized bandwidth of service	Power flux density [1] (dBW/m ²) in authorized bandwidth of service
Below 540 kHz	10	−65.8
540 to 1600 kHz	20	−59.8
1.6 to 470 MHz	10	[2] −65.8
470 to 890 MHz	30	[2] −56.2
Above 890 MHz	1	[2] −85 8

[1] Equivalent values of power flux density are calculated assuming a free-space characteristic impedence of 376.7 (approximately 120 pi) ohms.

[2] Space stations shall conform to the power flux density limits at the earth's surface specified in appropriate parts of the Commission's rules, but in no case should exceed the above levels in any 4 kHz band for all angles of arrival.

(d) Each applicant is responsible for determining whether proposals for a new or modified station require envionmental information. Applicants should refer to § 1.1307 to identify those actions for which environmental information must be submitted.

[53 FR 28940, Aug. 1, 1988, as amended at 54 FR 11719, Mar. 22, 1989]

§ 87.25 Filing of applications.

Rules about the filing of applications for radio station licenses are contained in this section.

(a) Each application must specify an address in the United States to be used by the Commission in serving documents or directing correspondence to the licensee. Otherwise the address contained in the licensee's most recent notification will be used for this purpose. Failure to answer Commission correspondence can result in revocation of the license.

(b) An original of each application must be filed with the Commission, Gettysburg, PA 17326, unless otherwise noted on the application form. Applications requiring fees as set forth at part 1, subpart G of this chapter must be filed in accordance with § 0.401(b) of the rules.

(c) One application may be submitted for the total number of aircraft stations in the fleet (fleet license).

(d) One application for aeronautical land station license may be submitted for the total number of stations in the fleet.

(e) One application for modification or transfer of control may be submitted for two or more stations when the individual stations are clearly identified and the following elements are the same for all existing or requested station licenses involved:

(1) Applicant;

(2) Specific details of request;

(3) Rule part.

(f) One application must be submitted for each Civil Air Patrol wing. The application must show the total number of transmitters to be authorized. The wing need not notify the Commission each time the number of transmitters is altered. Upon renewal, the wing must notify the Commission of any change in the total number of transmitters.

NOTE: A fee schedule was implemented by the Federal Communications Commission on April 1, 1986. A synopsis of the new fee schedule applicable to the Aviation Services is printed here as a convenience to the reader. Governmental entities are exempt from the fee schedule.

Aircraft stations (new, modification or renewal); no fee; submit to address indicated on FCC Form 404 or FCC Form 405B, as appropriate.

Aviation ground stations (new or modification); $60 fee; submit FCC Form 406 to FCC, Aviation Ground Service, P.O. Box 371632M, Pittsburgh, PA 15251-7632.

Aviation ground stations (renewal); $60 fee; submit FCC Form 405A to FCC, 405A Station Renewal, P.O. Box 360703M, Pittsburgh, PA 15251-6703.

§ 87.27 License term.

(a) Licenses for regular stations will normally be issued for five years.

(b) Licenses for developmental stations will be issued for a period not to exceed one year and are subject to change or to cancellation by the Commission at any time, upon reasonable notice but without a hearing.

§ 87.29 Partial grant of application.

Whenever the Commission, without a hearing, grants an application in part or with any privileges, terms, or conditions other than those requested the action will be considered as a grant of the application unless the applicant, within 30 days from the date on which such grant is made, or from its effective date if a later day is specified, files with the Commission a written protest, rejecting the grant as made. Upon receipt of such protest the Commission will vacate its original action upon the application and, if necessary, set the application for hearing.

§ 87.31 Changes during license term.

The following table indicates the required action for changes made during the license term:

Type of change	Required action
Mailing address	Written notice to FCC. Gettysburg, PA 17326.
Name of licensee (without change in ownership, control or corporate structure).	Written notice to FCC. Gettysburg, PA 17326.
Transfer of control of a corporation.	Use FCC Form 703.
Assignment of a radio station license (except aircraft station license).	Use FCC Form 1046 and 406.
Addition of transmitting equipment on a frequency, frequency band or with emission types not authorized on present license.	Use FCC Form 404 (aircraft). Use FCC Form 406 (land). Use FCC Form 480 (C.A.P.).
Addition or replacement of transmitting equipment on a frequency or frequency band with emission types authorized on present license.	None.
Addition of survival craft station.	None.

§ 87.33 Transfer of aircraft station license prohibited.

An aircraft station license cannot be assigned. If the aircraft ownership is transferred, the previous license must be returned to the Commission. The new owner must file for a new license.

§ 87.35 Cancellation of license.

When a station permanently discontinues operation, the license must be returned to the Commission, Gettysburg, PA 17326.

§ 87.37 Developmental license.

This section contains rules about the licensing of developmental operations subject to this part.

(a) *Showing required.* Each application for a developmental license must be accompanied by a letter showing that:

(1) The applicant has an organized plan of development leading to a specific objective;

(2) A point has been reached in the program where actual transmission by adio is essential;

(3) The program has reasonable promise of substantial contribution to he use of radio;

(4) The program will be conducted y qualified personnel;

(5) The applicant is legally qualified nd possesses technical facilities for onduct of the program as proposed;

(6) The public interest, convenience and necessity will be served by the proposed operation.

(b) *Signature and statement of understanding.* The showing must be signed by the applicant.

(c) *Assignable frequencies.* Developmental stations may be authorized to use frequencies available for the service and class of station proposed. The number of frequencies assigned will depend upon the specific requirements of the developmental program and the number of frequencies available.

(d) *Developmental program.* (1) The developmental program as described by the applicant must be substantially followed.

(2) Where some phases of the developmental program are not covered by the general rules of the Commission and the rules in this part, the Commission may specify supplemental or additional requirements or conditions as considered necessary in the public interest, convenience or necessity.

(3) The Commission may, from time to time, require a station engaged in developmental work to conduct special tests which are reasonable and desirable to the authorized developmental program.

(e) *Use of developmental stations.* (1) Developmental stations must conform to all applicable technical and operating requirements contained in this part, unless a waiver is specifically provided in the station license.

(2) Communication with any station of a country other than the United States is prohibited unless specifically provided in the station license.

(3) The operation of a developmental station must not cause harmful interference to stations regularly authorized to use the frequency.

(f) *Report of operation required.* A report on the results of the developmental program must be filed within 60 days of the expiration of the license. A report must accompany a request for renewal of the license. Matters which the applicant does not wish to disclose publicly may be so labeled; they will be used solely for the Commission's information. However, public disclosure is governed by § 0.467 of the Commission's rules. The report must include the following:

(1) Results of operation to date.

(2) Analysis of the results obtained.

(3) Copies of any published reports.

(4) Need for continuation of the program.

(5) Number of hours of operation on each authorized frequency during the term of the license to the date of the report.

[53 FR 28940, Aug. 1, 1988, as amended at 54 FR 11719, Mar. 22, 1989]

§ 87.39 Equipment acceptable for licensing.

Transmitters listed in this part must be type accepted for a particular use by the Commission based upon technical requirements contained in subpart D of this part.

§ 87.41 Frequencies.

(a) *Applicant responsibilities.* The applicant must propose frequencies to be used by the station consistent with the applicant's eligibility, the proposed operation and the frequencies available for assignment. Applicants must cooperate in the selection and use of frequencies in order to minimize interference and obtain the most effective use of stations. See subpart E and the appropriate subpart applicable to the class of station being considered.

(b) *Licensing limitations.* Frequencies are available for assignment to stations on a shared basis only and will not be assigned for the exclusive use of any licensee. The use of any assigned frequency may be restricted to one or more geographical areas.

(c) *Government frequencies.* Frequencies allocated exclusively to federal government radio stations may be licensed. The applicant for a government frequency must provide a satisfactory showing that such assignment is required for inter-communication with government stations or required for coordination with activities of the federal government. The Commission will coordinate with the appropriate government agency before a government frequency is assigned.

(d) *Assigned frequency.* The frequency coinciding with the center of an authorized bandwidth of emission must be specified as the assigned frequency. For single sideband emission, the
rier frequency must also be specifie

§ 87.43 Operation during emergency.

A station may be used for emerge
communications in a manner ot
than that specified in the station
cense or in the operating rules wh
normal communication facilities
disrupted. The Commission may or
the discontinuance of any such em
gency service.

§ 87.45 Time in which station is placed operation.

This section applies to unicom s
tions and radionavigation land s
tions, excluding radionavigation la
test stations. In those cases in which
new or modified license is issued, if t
station or modifications authoriz
have not been placed in operati
within eight months from the date
the grant, the license becomes inva
and must be returned to the Comm
sion unless the licensee shows go
cause why notification was not mad
The licensee must notify the Comm
sion in writing when the station
placed in operation.

§ 87.47 Application for a portable aircr station license.

A person may apply for a portab
aircraft radio station license if th
need exists to operate the same st
tion on more than one U.S. aircraft.

Subpart C—Operating Requirement and Procedures

OPERATING REQUIREMENTS

§ 87.69 Maintenance tests.

The licensee may make routin
maintenance tests on equipment othe
than emergency locator transmitters
there is no interference with the com
munications of any other station. Pro
cedures for conducting tests on emer
gency locator transmitters are con
tained in subpart F.

§ 87.71 Frequency measurements.

A licensed operator must measure
the operating frequencies of all land-
based transmitters at the following
times:

(a) When the transmitter is originally installed;

(b) When any change or adjustment is made in the transmitter which may affect an operating frequency; or

(c) When an operating frequency has shifted beyond tolerance.

§ 87.73 Transmitter adjustments and tests.

A general radiotelephone operator must directly supervise and be responsible for all transmitter adjustments or tests during installation, servicing or maintenance of a radio station. A general radiotelephone operator must be responsible for the proper functioning of the station equipment.

§ 87.75 Maintenance of tower marking and control equipment.

Section 303(q) of the Communications Act of 1934, as amended, requires some antenna structures to be painted or illuminated. The licensee of any radio station which has such an antenna structure must operate and maintain the tower marking and associated control equipment in accordance with Part 17 of this chapter.

§ 87.77 Availability for inspections.

The licensee must make the station and its records available for inspection upon request.

§ 87.79 Answer to notice of violation.

(a) Any person who receives an official notice of violation of the Communications Act, any legislative act, executive order, treaty to which the U.S. is a party, terms of a station or operator license, or the Commission's rules must send a written answer, in duplicate, to the office which originated the notice, within 10 days of receipt. If the licensee cannot acknowledge within the allotted period due to unavoidable circumstances, an answer must be given at the earliest practicable date with a satisfactory explanation of the delay.

(b) The answer to each notice must be complete in itself. The answer must contain a full expalantion of the incident involved and must give the action taken to prevent a recurrence of the violation. If the notice relates to operator errors, the answer must give the name and license number of the operator on duty.

RADIO OPERATOR REQUIREMENTS

§ 87.87 Classification of operator licenses and endorsements.

(a) Commercial radio operator licenses issued by the Commission are classified in accordance with the Radio Regulations of the International Telecommunication Union.

(b) The following licenses are issued by the Commission. International classification, if different from the license name, is given in parentheses. The licenses and their alphanumeric designator are listed in descending order.

(1) T-1 First Class Radiotelegraph Operator's Certificate

(2) T-2 Second Class Radiotelegraph Operator's Certificate

(3) G General Radiotelephone Operator Licenes (radiotelephone operator's general certificate)

(4) T-3 Third Class Radiotelegraph Operator's Certificate (radiotelegraph operator's special certificate)

(5) MP Marine Radio Operator Permit (radiotelephone operator's restricted certificate)

(6) RP Restricted Radiotelephone Operator Permit (radiotelephone operator's restricted certificate)

§ 87.89 Minimum operator requirements.

(a) A station operator must hold a commercial radio operator license or permit, except as listed in paragraph (d).

(b) The minimum operator license or permit required for operation of each specific classification is:

MINIMUM OPERATOR LICENSE OR PERMIT

Land stations, all classes

—All frequencies except VHF telephony transmitters providing domestic service	RP

Aircraft stations, all classes

—Frequencies below 30 MHz allocated exclusively to aeronautical mobile services	RP
—Frequencies below 30 MHz not allocated exclusively to aeronautical mobile services	MP or higher

—Frequencies above 30 MHz not allocated exclusively to aeronautical mobile services and assigned for international use	MP or higher
—Frequencies above 30 MHz not assigned for international use	none
—Frequencies not used solely for telephone or exceeding 250 watts carrier power or 1000 watts peak envelope power	G or higher

(c) The operator of a telephony station must directly supervise and be responsible for any other person who transmits from the station, and must ensure that such communications are in accordance with the station license.

(d) No operator license is required to:

(1) Operate an aircraft radar set, radio altimeter, transponder or other aircraft automatic radionavigation transmitter by flight personnel;

(2) Test an emergency locator transmitter or a survival craft station used solely for survival purposes;

(3) Operate an aeronautical enroute station which automatically transmits digital communications to aircraft stations;

(4) Operate a VHF telephony transmitter providing domestic service or used on domestic flights.

§ 87.91 Operation of transmitter controls.

The holder of a marine radio operator permit or a restricted radiotelephone operator permit must perform only transmitter operations which are controlled by external switches. These operators must not perform any internal adjustment of transmitter frequency determining elements. Further, the stability of the transmitter frequencies at a station operated by these operators must be maintained by the transmitter itself. When using an aircraft radio station on maritime mobile service frequencies the carrier power of the transmitter must not exceed 250 watts (emission A3E) or 1000 watts (emission R3E, H3E, or J3E).

OPERATING PROCEDURES

§ 87.103 Posting station license.

(a) *Stations at fixed locations.* The license or a photocopy must be posted or retained in the station's permanent records.

(b) *Aircraft radio stations.* T
cense must be either posted in th
craft or kept with the aircraft reg
tion certificate. If a single auth
tion covers a fleet of aircraft, a co
the license must be either post
each aircraft or kept with each
craft registration certificate.

(c) *Aeronautical mobile sta*
The license must be retained as
manent part of the station record

[53 FR 28940, Aug. 1, 1988, as amende
FR 11720, Mar. 22, 1989]

§ 87.105 Availability of operator per
license.

All operator permits or licenses
be readily available for inspection

§ 87.107 Station identification.

(a) *Aircraft station.* Identify b
of the following means:

(1) Aircraft radio station call si

(2) Assigned FCC control nu
(assigned to ultralight aircraft).

(3) The type of aircraft follow
the characters of the regist
marking ("N" number) of the ai
omitting the prefix letter "N".
communication is initiated
ground station, an aircraft statio
use the type of aircraft follow
the last three characters of the
tration marking.

(4) The FAA assigned radi
phony designator of the aircraft
ating organization followed by
flight identification number.

(5) An aircraft identificatio
proved by the FAA for use by ai
stations participating in an orga
flying activity of short duration.

(b) *Land and fixed stations.* Id
by means of radio station call si
location, its assigned FAA iden
the name of the city area or a
which it serves, or any additional
tification required. An aerona
enroute station which is part of a
tistation network may also be i
fied by the location of its co
point.

(c) *Survival craft station.* Id
by transmitting a reference t
parent aircraft. No identification
quired when distress signals are
mitted automatically. Transmis
other than distress or emergenc

nals, such as equipment testing or adjustment, must be identified by the call sign or by the registration marking of the parent aircraft followed by a single digit other than 0 or 1.

(d) *Exempted station.* The following types of stations are exempted from the use of a call sign: Airborne weather radar, radio altimeter, air traffic control transponder, distance measuring equipment, collision avoidance equipment, racon, radio relay, radionavigation land test station (MTF), and automatically controlled aeronautical enroute stations.

§ 87.109 Station logs.

A station at a fixed location in the international aeronautical mobile service must maintain a written or automatic log in accordance with Paragraph 3.5, Volume II, Annex 10 of the ICAO Convention.

§ 87.111 Suspension or discontinuance of operation.

The licensee of any airport control tower station or radionavigation land station must notify the nearest FAA regional office upon the temporary suspension or permanent discontinuance of the station. The FAA center must be notified again when service resumes.

[54 FR 11720, Mar. 22, 1989]

Subpart D—Technical Requirements

§ 87.131 Power and emissions.

The following table lists authorized emissions and maximum power. Power must be determined by direct measurement.

Class of station	Frequency band/frequency	Authorized emission(s)	Maximum power [1]
Aeronautical advisory	VHF	A3E	10 watts.
Aeronautical multicom	VHF	A3E	10 watts.
Aeronautical enroute and aeronautical fixed	HF	R3E, H3E, J3E, J7B, H2B	6 kw.
	HF	A1A, F1B, J2A, J2B	1.5 kw.
Aeronautical search and rescue	VHF	A3E, A9W	200 watts.[2]
	VHF	A3E	10 watts.
	HF	R3E, H3E, J3E	100 watts.
Operational fixed	VHF	G3E, F2D	30 watts.
Flight test land	VHF	A3E	200 watts.
	UHF	F2D, F9D, F7D	25 watts.[3]
	HF	H2B, J3E, J7D, J9W	6.0 kw.
Aviation support	VHF	A3E	50 watts.
Airport control tower	VHF	A3E	50 watts.
	Below 400 kHz	A3E	15 watts.
Aeronautical utility mobile	VHF	A3E	10 watts.
Radionavigation land test	108.150 MHz	A9W	1 milliwatt.
	334.550 MHz	A1N	1 milliwatt.
	Other VHF	M1A, XXA, A1A, A1N, A2A, A2D, A9W.	1 watt.
	Other UHF	M1A, XXA, A1A, A1N, A2A, A2D, A9W.	1 watt.
	5031.0 MHz	F7D	1 watt.
Radionavigation land	Various [4]	Various [4]	Various.[4]
		Aeronautical Frequencies	
Aircraft (Communication)	UHF	F2D, F9D, F7D	25 watts.
	VHF	A3E, A9W	55 watts.
	HF	R3E, H3E, J3E, J7B, H2B, J7D, J9W	400 watts.
	HF	A1A, F1B, J2A, J2B	100 watts.
		Marine Frequencies [5]	
	156.300 MHz	G3E	5 watts.
	156.375 MHz	G3E	5 watts.
	156.400 MHz	G3E	5 watts.
	156.425 MHz	G3E	5 watts.
	156.450 MHz	G3E	5 watts.
	156.625 MHz	G3E	5 watts.
	156.800 MHz	G3E	5 watts.
	156.900 MHz	G3E	5 watts.
	157.425 MHz	G3E	5 watts.
	HF [6]	R3E, H3E, J3E, J2B, F1B, A3E	1000 watts.
	MF [6]	R3E, H3E, J3E, J2B, F1B	250 watts. 1000 watts.

(Radionavigation)	HF [6] Various [7]	A3E Various [7]	250 watts Various [7]

[1] The power is measured at the transmitter output terminals and the type of power is determined according to the emission designator as follows:
(i) Mean power (pY) for amplitude modulated emissions and transmitting both sidebands using unmodulated full carrier.
(ii) Peak envelope power (pX) for all emission designators other than those referred to in paragraph (i) of this note.
[2] Power and antenna height are restricted to the minimum necessary to achieve the required service.
[3] Transmitter power may be increased to overcome line and duplexer losses but must not exceed 25 watts delivered to the antenna.
[4] Frequency, emission, and maximum power will be determined after coordination with appropriate Government agencies.
[5] To be used with airborne marine equipment type accepted for Part 80 (ship) and used in accordance with Part 87.
[6] Applicable only to marine frequencies used for public correspondence.
[7] Frequency, emission, and maximum power will be determined by appropriate standards during the type acceptance process.

[54 FR 11720, Mar. 22, 1989]

§ 87.133 Frequency stability.

(a) Except as provided in paragraphs (c), (d), and (f) of this section, the carrier frequency of each station must be maintained within these tolerances:

Frequency band (lower limit exclusive, upper limit inclusive), and categories of stations	Tolerance [1]	Tolerance [2]
(1) Band-9 to 535 kHz:		
Aeronautical stations	100	100
Aircraft stations	200	100
Survival craft stations on 500 kHz	5,000	20 Hz [3]
Radionavigation stations	100	100
(2) Band-1605 to 4000 kHz:		
Aeronautical fixed stations:		
Power 200 W or less	100	100 [8]
Power above 200 W	50	50 [8]
Aeronautical stations:		
Power 200 W or less	100 [7]	100 [7, 8]
Power above 200 W	50 [7]	50 [7, 8]
Aircraft stations	100 [7]	100 [7]
Survival craft stations on 2182 kHz.	200	20 Hz [3]
(3) Band-4 to 29.7 MHz:		
Aeronautical fixed stations:		
Power 500 W or less	50	
Power above 500 W	15	
Single-sideband and independent-sideband emission:		
Power 500 W or less		50 Hz
Power above 500 W		20 Hz
Class F1B emissions		10 Hz
Other classes of emission:		
Power 500 W or less		20
Power above 500 W		10
Aeronautical stations:		
Power 500 W or less	[7] 100	100 [7]
Power above 500 W	[7] 50	50 [7]
Aircraft stations	[7] 100	100 [7]
Survival craft stations on 8364 kHz.	200	50 Hz [3]
(4) Band-29.7 to 100 MHz:		
Aeronautical fixed stations:		
Power 200 W or less	50	
Power above 200 W	30	
Power 50 W or less		30
Power above 50 W		20
Operational fixed stations:		
73-74.6 MHz (Power 50 W or less).	50	30
73-74.6 MHz (Power above 50 W).	20	20
72-73.0 MHz and 75.4-76.0 MHz.	5	5
Radionavigation stations	100	50
(5) Band-100 to 137 MHz:		
Aeronautical stations	[4] 50	20
Emergency locator transmitter test stations.	50	50
Survival craft stations on 121.5 MHz.	50	50
Emergency locator stations	50	50
Aircraft and other mobile stations in the Aviation Services.	50 [5]	30
Radionavigation stations	20	20
(6) Band-137 to 470MHz:		
Aeronautical stations	50	20
Survival craft stations on 243 MHz	50	50
Aircraft stations	50 [5]	30
Radionavigation stations	50	
(7) Band-470 to 2450 MHz:		
Aeronautical stations	100	
Aircraft stations	100	
Radionavigation stations:		
470-960 MHz	500	
960-1215 MHz	20	
1215-2450 MHz	500	
(8) Band-2450 to 10500 MHz:		
Radionavigation stations	[6, 9] 1250	
(9) Band-10.5 GHz to 40 GHz:		
Radionavigation stations	5000	

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[1] This tolerance is the maximum permitted until
1990, for transmitters installed before January 2,
used at the same installation. Tolerance is indicat
in 10^6 unless shown as Hertz (Hz).

[2] This tolerance is the maximum permitted after
1985 for new and replacement transmitters and t
mitters after January 1, 1990. Tolerance is indicat
in 10^6 unless shown as Hertz (Hz).

[3] For transmitters first type accepted or type
after November 30, 1977.

[4] The tolerance for transmitters type accepte
January 1, 1966, and January 1, 1974, is 30 pa
The tolerance for transmitters type accepted after
1974, and stations using offset carrier techniques
in 10^6.

[5] The tolerance for transmitters type accepted
ary 1, 1974, is 30 parts in 10^6.

[6] In the 5000 to 5250 MHz band, the FAA
tolerance of ±10 kHz for Microwave Landing S
tions which are to be a part of the National Airspa
(FAR 171).

[7] For single-sideband transmitters operating in th
cy bands 1605-4000 kHz and 4-29.7 MHz which
ed exclusively to the Aeronautical Mobile (R) S
tolerance is: Aeronautical stations, 10 Hz; aircraft s
Hz.

[8] For single-sideband radiotelephone transmitters
ance is: In the bands 1605-4000 kHz and 4-29
peak envelope powers of 200 W or less and 500
respectively, 50 Hz; in the bands 1605-4000 kHz
MHz for peak envelope powers above 200 W an
respectively, 20 Hz.

[9] Where specific frequencies are not assigned
stations, the bandwidth occupied by the emission
stations must be maintained within the band alloca
service and the indicated tolerance does not apply.

(b) The power shown in para
(a) of this section is the peak en
power for single-sideband transm
and the mean power for all
transmitters.

(c) For single-sideband transm
the tolerance is:

(1) All aeronautical stations on land
other than Civil Air Patrol..............
(2) All aircraft stations other than
Civil Air Patrol..............................
(3) Civil Air Patrol Stations...................

(d) For radar transmitters,
non-pulse signal radio altimeter
frequency at which maximum
sion occurs must be within the a
ized frequency band and must
closer than 1.5/T MHz to the
and lower limits of the auth

bandwidth, where T is the pulse duration in microseconds.

(e) The Commission may authorize tolerances other than those specified in this section upon a satisfactory showing of need.

(f) The carrier frequency tolerance of transmitters operating in the 1435-1535 MHz and 2310-2390 MHz bands manufactured before January 2, 1985, is 0.003 percent. The carrier frequency tolerance of transmitters operating in the 1435-1535 MHz and 2310-2390 MHz bands manufactured after January 1, 1985, is 0.002 percent. After January 1, 1990, the carrier frequency tolerance of all transmitters operating in the 1435-1535 MHz and 2310-2390 MHz bands is 0.002 percent.

EFFECTIVE DATE NOTE: At 54 FR 42804, Oct. 18, 1989, an order was published waiving compliance with footnote 2 of § 87.133(a), until January 1, 1992.

§ 87.135 Bandwidth of emission.

(a) Occupied bandwidth is the width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to 0.5 percent of the total mean power of a given emission.

(b) The authorized bandwidth is the maximum occupied bandwidth authorized to be used by a station.

(c) The necessary bandwidth for a given class of emission is the width of the frequency band which is just sufficient to ensure the transmission of information at the rate and with the quality required under specified conditions.

§ 87.137 Types of emission.

(a) The assignable emissions, corresponding emission designators and authorized bandwidths are as follows:

Class of emission	Emission designator	Authorized bandwidth (kilohertz)		
		Below 50 MHz	Above 50 MHz	Frequency deviation
A1A [1]	100HA1A	0.25		
A1N	300HA1N		0.75	
A2A	2K04A2A	2.74	50	
A2D	6K0A2D		50	
A2D [2]	13K0A2D		50	
A3E [2]	6K00A3E		[3] 50	
A3E	3K20A3E [16]		[16] 25	
A3N [4]	3K20A3N		25	
A9W [5]	13K0A9W		25	
F1B [1]	1K70F1B	1.7		
F1B [1]	2K40F1B	2.5		
F2D	5M0F2D		([9])	
F3E [6]	16K0F3E		20	5
F3E [7]	36K0F3E		40	15
F7D [8]	5M0F7D		([9])	
F9D	5M0F9D		([9])	
G3E [6]	16K0G3E		20	5
H2B [10] [11]	2K80H2B	3.0		
H3E [11] [12]	2K80H3E	3.0		
J2A [1]	100HJ2A	0.25		
J2B [1]	1K70J2B	1.7		
	2K40J2B	2.5		
J3E [11] [12]	2K80J3E	3.0		
J7B [11]	2K80J7B	3.0		
J7D	5M0J7D		([9])	
J9W [11]	2K80J9W	3.0		
M1A	620HM1A			
NON	NON		None [15]	
PON [13]	([9])		([9])	
R3E [11] [12]	2K80R3E	3.0		
XXA [14]	1K12XXA	2.74		

NOTES:

[1] A1A, F1B, J2A and J2B are permitted provided they do not cause harmful interference to H2B, J3E, J7B and J9W.

[2] For use with an authorized bandwidth of 6.0 kilohertz at radiobeacon stations. A3E will not be authorized:

(i) At existing radiobeacon stations that are not authorized to use A3 and at new radiobeacon stations unless specifically recommended by the FAA for safety purposes.

(ii) At existing radiobeacon stations currently authorized to use A3, subsequent to January 1, 1990, unless specifically recommended by the FAA for safety purposes.

[3] In the band 117.975–136 MHz, the authorized bandwidth is 25 kHz for transmitters type accepted after January 1, 1974.

[4] Applicable only to Survival Craft Stations and to the emergency locator transmitters and emergency locator transmitter test stations employing modulation in accordance with that specified in § 87.141 of the Rules. The specified bandwidth and modulation requirements shall apply to emergency locator transmitters for which type acceptance is granted after October 21, 1973.

[5] This emission may be authorized for audio frequency shift keying and phase shift keying for digital data links on any frequency listed in § 87.263(a)(1), § 87.263(a)(3) or § 87.263(a)(5). 13K0A2D emission may be authorized on frequencies not used for voice communications. If the channel is used for voice communications, 13K0A9W emission may be authorized, provided the data is multiplexed on the voice carrier without derogating voice communications.

[6] Applicable to operational fixed stations in the bands 72.0–73.0 MHz and 75.4–76.0 MHz and to CAP stations using F3 on 143.900 MHz and 146.150 MHz.

[7] Applicable to operational fixed stations presently authorized in the band 73.0–74.6 MHz.

[8] The authorized bandwidth is equal to the necessary bandwidth for frequency or digitally modulated transmitters used in aeronautical telemetering and associated aeronautical telemetry or telecommand stations operating in the 1435–1535 MHz and 2310–2390 MHz bands. The necessary bandwidth must be computed in accordance with Part 2 of this chapter.

[9] To be specified on license.

[10] H2B must be used by stations employing digital selective calling.

[11] For A1A, F1B and single sideband emissions, except H2B, the assigned frequency must be 1400 Hz above the carrier frequency.

[12] R3E, H3E, and J3E will be authorized only below 25000 kHz. Only H2B, J3E, J7B, and J9W are authorized, except that A3E and H3E may be used only on 3023 kHz and 5680 kHz for search and rescue operations.

[13] The letters "K, L, M, Q, V, W, and X" may also be used in place of the letter "P" for pulsed radars.

[14] Authorized for use at radiobeacon stations.

[15] Applicable only to transmitters of survival craft stations, emergency locator transmitter stations and emergency locator transmitter test stations type accepted after October 21, 1973.

(b) For other emissions, an applicant must determine the emission designator by using part 2 of this chapter.

(c) A license to use radiotelephony includes the use of tone signals or signaling devices whose sole function is to establish or maintain voice communications.

(d) Emissions other than, or bandwidths in excess of, those listed in paragraph (b) of this section, will be authorized only upon a satisfactory showing of need. An application requesting this special license must fully describe the emission desired and the required bandwidth, and must state the purpose of the proposed operation.

[53 FR 28940, Aug. 1, 1988, as amended at 54 FR 11720, Mar. 22, 1989; 55 FR 7333, Mar. 1, 1990; 55 FR 13535, Apr. 11, 1990; 55 FR 28627, July 12, 1990]

§ 87.139 Emission limitations.

(a) Except when using single sideband (R3E, H3E, J3E), or frequency modulation (F9) or digital modulation (F9Y) for telemetry or telecommand in the frequency bands 1435–1535 MHz and 2310–2390 MHz, the mean power of any emissions must be attenuated below the mean power of the transmitters (pY) as follows:

(1) When the frequency is removed from the assigned frequency by more than 50 percent up to and including 100 percent of the authorized bandwidth the attenuation must be at least 25 dB;

(2) When the frequency is removed from the assigned frequency by more than 100 percent up to and including 250 percent of the authorized bandwidth the attenuation must be at least 35 dB.

(3) When the frequency is removed from the assigned frequency by more than 250 percent of the authorized bandwidth the attenuation for aircraft station transmitters must be at least 40 dB; and the attenuation for aeronautical station transmitters must be at least 43 + 10 $\log_{10}$ pY dB.

(b) For aircraft station transmitters and for aeronautical station transmitters first installed before February 1, 1983, and using H2B, H3E, J3E, J7B or J9W, the mean power of any emissions must be attenuated below the mean power of the transmitter (pY) as follows:

(1) When the frequency is removed from the assigned frequency by more than 50 percent up to and including 150 percent of the authorized bandwidth of 4.0 kHz, the attenuation must be at least 25 dB.

(2) When the frequency is removed from the assigned frequency by more than 150 percent up to and including 250 percent of the authorized bandwidth of 4.0 kHz, the attenuation must be at least 35 dB.

(3) When the frequency is removed from the assigned frequency by more than 250 percent of the authorized bandwidth of 4.0 kHz for aircraft station transmitters the attenuation must

at least 40 dB; and for aeronautical ation transmitters the attenuation ust be at least 43 + 10 $\log_{10}$ pY dB.

(c) For aircraft station transmitters rst installed after February 1, 1983, d for aeronautical station transmit- rs in use after February 1, 1983, and ing H2B, H3E, J3E, J7B or J9W, the ak envelope power of any emissions ust be attenuated below the peak en- elope power of the transmitter (pX) follows:

(1) When the frequency is removed om the assigned frequency by more an 50 percent up to and including 50 percent of the authorized band- idth of 3.0 kHz, the attenuation must e at least 30 dB.

(2) When the frequency is removed rom the assigned frequency by more han 150 percent up to and including 50 percent of the authorized band- idth of 3.0 kHz, the attenuation must e at least 38 dB.

(3) When the frequency is removed rom the assigned frequency by more han 250 percent of the authorized andwidth of 3.0 kHz for aircraft ransmitters the attenuation must be t least 43 dB. For aeronautical sta- ion transmitters with transmitter ower up to and including 50 watts the ttenuation must be at least 43 + 10 $\log_{10}$ pX dB and with transmitter ower more than 50 watts the attenu- tion must be at least 60 dB.

(d) Except for telemetry in the 1435- 535 MHz band, when the frequency is emoved from the assigned frequency y more than 250 percent of the au- horized bandwidth for aircraft sta- ions above 30 MHz and all ground sta- ions the attenuation must be at least 3 + $\log_{10}$ pY dB.

(e) When using frequency modula- ion or digital modulation for teleme- ry or telecommand in the 1435–1535 MHz and 2310–2390 MHz frequency bands with an authorized bandwidth equal to or less than 1 MHz the emis- sions must be attenuated as follows:

(1) On any frequency removed from the assigned frequency by more than 100 percent of the authorized bandwidth up to and including 100 percent plus 0.5 MHz, the attenuation must be at least 60 dB, when measured in a 3.0 kHz bandwidth. This signal need not be attenuated more than 25 dB below 1 milliwatt.

(2) On any frequency removed from the assigned frequency by more than 100 percent of the authorized bandwidth plus 0.5 MHz, the attenuation must be at least 55 + 10 $\log_{10}$ pY dB when measured in a 3.0 kHz bandwidth.

(f) When using frequency modulation or digital modulation for telemetry or telecommand in the 1435–1535 MHz or 2310–2390 MHz frequency bands with an authorized bandwidth greater than 1 MHz, the emissions must be attenuated as follows:

(1) On any frequency removed from the assigned frequency by more than 50 percent of the authorized bandwidth plus 0.5 MHz up to and including 50 percent of the authorized bandwidth plus 1.0 MHz, the attenuation must be 60 dB, when measured in a 3.0 kHz bandwidth. The signal need not be attenuated more than 25 dB below 1 milliwatt.

(2) On any frequency removed from the assigned frequency by more than 50 percent of the authorized bandwidth plus 1.0 MHz, the attenuation must be at least 55 + 10 $\log_{10}$ pY dB, when measured in a 3.0 kHz bandwidth.

(g) The requirements of paragraphs (e) and (f) of this section apply to transmitters type accepted after January 1, 1977, and to all transmitters first installed after January 1, 1983.

§ 87.141 Modulation requirements.

(a) When A3E emission is used, the modulation percentage must not exceed 100 percent. This requirement does not apply to emergency locator transmitters or survival craft transmitters.

(b) A double sideband full carrier amplitude modulated radiotelephone transmitter with rated carrier power output exceeding 10 watts must be capable of automatically preventing modulation in excess of 100 percent.

(c) If any licensed radiotelephone transmitter causes harmful interference to any authorized radio service because of excessive modulation, the Commission will require the use of the transmitter to be discontinued until it

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is rendered capable of automatically preventing modulation in excess of 100 percent.

(d) Single sideband transmitters must be able to operate in the following modes:

Carrier mode	Level N(dB) of the carrier with respect to peak envelope power
Full carrier (H3E)	$0>N>-6$.
Suppressed carrier (J3E)	Aircraft stations $N<-26$ ≧ Aeronautical stations $N<-40$.

(e) Each frequency modulated transmitter operating in the band 72.0–76.0 MHz must have a modulation limiter.

(f) Each frequency modulated transmitter equipped with a modulation limiter must have a low pass filter between the modulation limiter and the modulated stage. At audio frequencies between 3 kHz and 15 kHz, the filter must have an attenuation greater than the attenuation at 1 kHz by at least 40 $\log_{10}$ (f/3) db where "f" is the frequency in kilohertz. Above 15 kHz, the attenuation must be at least 28 db greater than the attenuation at 1 kHz.

(g) The types of emissions for ELTs must be in accordance with those specified in the Federal Aviation Administration (FAA) Technical Standard Order (TSO) Document TSO-C91a titled "Emergency Locator Transmitter (ELT) Equipment" dated April 29, 1985. TSO-C91a is incorporated by reference in accordance with 5 U.S.C. 552(a). TSO-C91a may be obtained from the Department of Transportation, Federal Aviation Administration, Office of Airworthiness, 800 Independence Avenue SW., Washington, DC 20591.

(h) Transmission of A3E or NON emission must not exceed 90 seconds and must be followed by a transmission of at least three minutes of A3N emission; each transmission of a synthesized and/or pre-recorded voice message must be preceded by the words "this is a recording."

(i) ELTs manufactured effective October 1, 1988, must have in emissions A3N, A3E and NON a clearly defined carrier frequency distinct from the modulation sidebands. On 121.500 MHz at least thirty percent of the total power emitted during each sweep cycle of the audio frequencies (A3N emission) must be contained within ±30 Hz of the reference carrier frequency. On 243.000 MHz at least thirty percent of the total power emitted during each sweep cycle of the audio frequencies (A3N emission) must be contained within ±60 Hz of the reference carrier frequency. See TSO-C91a at paragraph (a)(3)(ii) of this section. Additionally, if the type of modulation is changed the carrier frequency must not shift more than ±30 Hz from the fixed reference frequency on 121.500 MHz and ±60 Hz on 243.000 MHz. The long term stability of the carrier frequency must comply with the requirements in § 87.133.

[53 FR 28940, Aug. 1, 1988, as amended at 54 FR 11721, Mar. 22, 1989]

§ 87.143 Transmitter control requirements.

(a) Each transmitter must be installed so that it is not accessible to, or capable of being operated by persons other than those authorized by the licensee.

(b) Each station must be provided with a control point at the location of the transmitting equipment, unless otherwise specifically authorized. Except for aeronautical enroute stations governed by paragraph (e) of this section, a control point is the location at which the radio operator is stationed. It is the position at which the transmitter(s) can immediately be turned off.

(c) Applicants for additional control points at aeronautical advisory (unicom) stations must specify the location of each proposed control point.

(d) Except for aeronautical enroute stations governed by paragraph (f) of this section, the control point must have the following facilities installed:

(1) A device that indicates when the transmitter is radiating or when the transmitter control circuits have been switched on. This requirement does not apply to aircraft stations;

(2) Aurally monitoring of all transmissions originating at dispatch points;

(3) A way to disconnect dispatch points from the transmitter; and

) A way to turn off the transmit-

) A dispatch point is an operating
tion subordinate to the control
t. Dispatch points may be in-
ed without authorization from the
mission, and dispatch point opera-
are not required to be licensed.
In the aeronautical enroute serv-
the control point for an automati-
controlled enroute station is the
puter facility which controls the
smitter. Any computer controlled
smitter must be equipped to auto-
cally shut down after 3 minutes of
inuous transmission of an unmo-
ted carrier.

**45 Acceptability of transmitters for
icensing.**

The Commission publishes a list
ype approved and type accepted
oment entitled "Radio Equipment
-Equipment Acceptable for Li-
ng." Copies of this list are avail-
for inspection at any of the Com-
on's offices.
Each transmitter must be type
ted for use in these services,
t as listed in paragraph (d) of
ection. However, aircraft stations
n transmit on maritime mobile
encies musts use transmitters
accepted for use in ship stations
cordance with Part 80 of this
er.
Some radio equipment installed
air carrier aircraft must meet
rements of the Commission and
e FAA. The FAA requirements
be obtained from the Federal
ion Administration, Aircraft
tenance Division (AFS-300), 800
endence SW., Washington, DC
.
The equipment listed below is ex-
ed from type acceptance. The op-
n of transmitters which have not
type accepted must not result in
ful interference due to the fail-
f those transmitters to comply
technical standards of this sub-

Development or Civil Air Patrol
nitters.
Flight test station transmitters
nited periods where justified.
U.S Government transmitters
hed in the performance of a U.S. Government contract if the use of type accepted equipment would increase the cost of the contract or if the transmitter will be incorporated in the finished product. However, such equipment must meet the technical standards contained in this subpart.

§ 87.147 Type acceptance of equipment.

(a) Type acceptance may be requested by following the type acceptance procedure in Part 2 of this chapter. Aircraft transmitters must meet the requirements over an ambient temperature range of -20 degreess to +50 degrees Celsius.

(b) An applicant for a station license may request type acceptance for an individual transmitter by following the type acceptance procedure in Part 2 of this chapter. Such a transmitter will be individually type accepted and so noted on the station license, but will not generally be included in the Commission's 'Radio Equipment List—Equipment Acceptable for Licensing".

(c) An applicant for type acceptance of equipment intended for transmission in any of the frequency bands listed in paragraph (c)(3) of this section, must notify the FAA of the filing of a type acceptance application. The letter of notification must be mailed to: FAA, Spectrum Engineering Division (AES-500), 800 Independence Avenue SW., Washington, DC 20591 no later than the date of filing of the application with the Commission.

(1) The notification must describe the equipment, give the manufacturer's identification, antenna characteristics, rated output power, emission type and characteristics, the frequency or frequencies of operation, and essential receiver characteristics if protection is required.

(2) The type acceptance application must include a copy of the notification letter to the FAA. The Commission will not act for 21 days after receipt of the application to afford the FAA an opportunity to comment. If the FAA objects to the applicatioin for equipment authorization, it should mail its objection with a showing that the equipment is incompatible with the National Airspace System to: Office of Engineering and Technology—Laurel

Laboratory, Authorization And Evaluation Division, 7435 Oakland Mills Road, Columbia, MD 21046. If the Commission receives such an objection, the Commission will consider the FAA showing before taking final action on the application.

(3) The frequency bands are as follows: 74.8 MHz to 75.2 MHz; 108.000 MHz to 117.975 MHz; 328.600 MHz to 335.400 MHz; 960.000 MHz to 1215.000 MHz; 1559.000 MHz to 1626.500 MHz; 5000.000 MHz to 5250.000 MHz; 14.000 GHz to 14.4000 GHz; 15.400 GHz to 15.700 GHz; 24.250 GHz to 25.250 GHz; and 31.800 GHz to 33.400 GHz.

[53 FR 28940, Aug. 1, 1988, as amended at 54 FR 11721, Mar. 22, 1989]

Subpart E—Frequencies

§ 87.169 Scope.

This subpart contains class of station symbols and a frequency table which lists assignable frequencies. Frequencies in the Aviation Services will transmit communications for the safe, expeditious, and economic operation of aircraft and the protection of life and property in the air. Each class of land station and Civil Air Patrol station may communicate in accordance with the particular sections of this part which govern these classes. Land stations in the Aviation Services in Alaska may transmit messages concerning sickness, death, weather, ice conditions or other matters relating to safety of life and property if there is no other established means of communications between the points in question and no charge is made for the communications service.

§ 87.171 Class of station symbols.

The two or three letter symbols for the classes of station in the aviation services are:

Symbol and class of station

AX—Aeronautical fixed
AXO—Aeronautical operational fixed
FA—Aeronautical land (unspecified)
FAU—Aeronautical advisory (unicom)
FAC—Airport control tower
FAE—Aeronautical enroute
FAM—Aeronautical multicom
FAP—Civil Air Patrol
FAR—Aeronautical search and rescue
FAS—Aviation support
FAT—Flight test
FAW—Automatic weather observation
MA—Aircraft (Air carrier and Private)
MA1—Air carrier aircraft only
MA2—Private aircraft only
MOU—Aeronautical utility mobile
MRT—ELT test
RL—Radionavigation land (unspecified)
RLA—Marker beacon
RLB—Radiobeacon
RLG—Glide path
RLL—Localizer
RLO—VHF omni-range
RLS—Surveillance radar
RLT—Radionavigation land test
RLW—Microwave landing system

§ 87.173 Frequencies.

(a) The table in paragraph (b) of this section lists assignable carrier frequencies or frequency bands.

(1) The single letter symbol appearing in the "Subpart" column indicates the subpart of this part which contains additional applicable regulations.

(2) The two or three letter symbol appearing in the "Class of Station" column indicates the class of station to which the frequency is assignable.

(b) Frequency table:

Frequency or frequency band	Subpart	Class of station	Remarks
90–110 kHz	O	RL	LORAN"C".
190–285 kHz	O	RLB	Radiobeacons.
200–285 kHz	O	FAC	Air traffic control.
325–405 kHz	O	FAC	Air traffic control.
325–435 kHz	O	RLB	Radiobeacons.
410.0 kHz	F	MA	International direction-finding for use outside of U.S.
457.0 kHz	F	MA	Working frequency for aircraft on over water flights.
500.0 kHz	F	MA	International calling and distress frequency for ships and aircraft on over water flights.
510 525 kHz	O	RLB	Radiobeacons.
2182.0 kHz	F	MA	International distress and calling.
2371.0 kHz	R	MA, FAP	Civil Air Patrol.
2374.0 kHz	R	MA, FAP	Civil Air Patrol.
2648.0 kHz	I	AX	Alaska station.
2851.0 kHz	I, J	MA, FAE, FAT	International HF (AFI); Flight test.
2854.0 kHz	I	MA, FAE	International HF (SAT).
2866.0 kHz	I	MA, FAE	Domestic HF (Alaska).
2869.0 kHz	I	MA, FAE	International HF (CEP).
2872.0 kHz	I	MA, FAE	International HF (NAT).
2875.0 kHz	I	MA, FAE	Domestic HF.
2878.0 kHz	I	MA1, FAE	Domestic HF; International HF (AFI).
2887.0 kHz	I	MA, FAE	International HF (CAR).
2899.0 kHz	I	MA, FAE	International HF (NAT).
2911.0 kHz	I	MA, FAE	Domestic HF.
2932.0 kHz	I	MA, FAE	International HF (NP).
2935.0 kHz	I	MA, FAE	International HF (SAT).
2944.0 kHz	I	MA, FAE	International HF (SAM and MID).
2956.0 kHz	I	MA, FAE	Domestic HF.
2962.0 kHz	I	MA, FAE	International HF (NAT).
2971.0 kHz	I	MA, FAE	International HF (NAT).
2992.0 kHz	I	MA, FAE	International HF (MID).
2998.0 kHz	I	MA, FAE	International HF (CWP).
3004.0 kHz	I, J	MA, FAE, FAT	International HF (NCA); Flight test.
3013.0 kHz	I	MA, FAE	Long distance operational control.
3016.0 kHz	I	MA, FAE	International HF (EA, NAT).
3019.0 kHz	I	MA1, FAE	Domestic HF; International HF ((NCA).
3023.0 kHz	F, M, O	MA1, FAR, FAC	Search and rescue communications.
3281.0 kHz	K	MA, FAS	Lighter-than-air craft and aeronautical stations serving lighter-than-air craft.
3413.0 kHz	I	MA, FAE	International HF (CEP).
3419.0 kHz	I	MA, FAE	International HF (AFI).
3425.0 kHz	I	MA, FAE	International HF (AFI).
3434.0 kHz	I	MA1, FAE	Domestic HF.
3443.0 kHz	J	MA, FAT	
3449.0 kHz	I	MA, FAE	Domestic HF.
3452.0 kHz	I	MA, FAE	International HF (SAT).
3455.0 kHz	I	MA, FAE	International HF (CAR, CWP).

Frequency or frequency band	Subpart	Class of station	Remarks
3467.0 kHz	I	MA, FAE	International HF (AFI, MID, SP).
3470.0 kHz	I	MA, FAE	Domestic HF and International HF (SEA).
3473.0 kHz	I	MA, FAE	International HF (MID).
3476.0 kHz	I	MA, FAE	International HF (NO, NAT).
3479.0 kHz	I	MA, FAE	International HF (EUR, SAM).
3485.0 kHz	I	MA, FAE	International HF (EA, SEA).
3491.0 kHz	I	MA, FAE	International HF (EA).
3494.0 kHz	I	MA, FAE	Long distance operational control.
4125.0 kHz	F	MA	Distress and safety with ships and coast stations.
4466.0 kHz	R	MA, FAP	Civil Air Patrol.
4469.0 kHz	R	MA, FAP	Civil Air Patrol.
4506.0 kHz	R	MA, FAP	Civil Air Patrol.
4509.0 kHz	R	MA, FAP	Civil Air Patrol.
4550.0 kHz	I	AX	Gulf of Mexico.
4582.0 kHz	R	MA, FAP	Civil Air Patrol.
4585.0 kHz	R	MA, FAP	Civil Air Patrol.
4601.0 kHz	R	MA, FAP	Civil Air Patrol.
4604.0 kHz	R	MA, FAP	Civil Air Patrol.
4627.0 kHz	R	MA, FAP	Civil Air Patrol.
4630.0 kHz	R	MA, FAP	Civil Air Patrol.
4645.0 kHz	I	AX	Alaska.
4657.0 kHz	I	MA, FAE	International HF (AFI, CEP).
4666.0 kHz	I	MA, FAE	International HF (CWP).
4669.0 kHz	I	MA, FAE	International HF (MID, SAM).
4672.0 kHz	I	MA1, FAE	Domestic HF.
4675.0 kHz	I	MA, FAE	International HF (NAT).
4678.0 kHz	I	MA, FAE	International HF (NCA).
4947.5 kHz	I	AX	Alaska.
5036.0 kHz	I	AX	Gulf of Mexico.
5122.5 kHz	I	AX	Alaska.
5167.5 kHz	I	FA	Alaska emergency.
5310.0 kHz	I	AX	Alaska.
5451.0 kHz	J	MA, FAT	
5463.0 kHz	I	MA1, FAE	Domestic HF.
5469.0 kHz	J	MA, FAT	
5427.0 kHz	I	MA, FAE	Domestic HF.
5484.0 kHz	I	MA, FAE	Domestic HF.
5490.0 kHz	I	MA, FAE	Domestic HF.
5493.0 kHz	I	MA, FAE	International HF (AFI).
[illegible]	I	MA, FAE	Domestic HF.
[illegible]	I	MA1, FAE	Domestic HF.
[illegible]	I	MA, FAE	International HF (CAR).
[illegible]	I	MA, FAE	International HF (SAM).
[illegible]	I	MA, FAE	Long distance operational control.
[illegible]	I	MA, FAE	Long distance operational control.
[illegible]	I	MA, FAE	International HF (CEP).

5550.0 kHz	I	MA, FAE	International HF (CAR).
5559.0 kHz	I	MA, FAE	International HF (SP).
5565.0 kHz	I	MA, FAE	International HF (SAT).
5571.0 kHz	J	MA, FAT	
5574.0 kHz	I	MA, FAE	International HF (CEP).
5598.0 kHz	I	MA, FAE	International HF (NAT).
5616.0 kHz	I	MA, FAE	International HF (NAT).
5628.0 kHz	I	MA, FAE	International HF (NP).
5631.0 kHz	I	MA, FAE	Domestic HF.
5634.0 kHz	I	MA, FAE	International HF (INO).
5643.0 kHz	I	MA, FAE	International HF (SP).
5646.0 kHz	I	MA, FAE	International HF (NCA).
5649.0 kHz	I	MA, FAE	International HF (NAT, SEA).
5652.0 kHz	I	MA, FAE	International HF (AFI, CWP).
5655.0 kHz	I	MA, FAE	International HF (EA, SEA).
5658.0 kHz	I	MA, FAE	International HF (AFI, MID).
5661.0 kHz	I	MA, FAE	International HF (CWP, EUR).
5664.0 kHz	I	MA, FAE	International HF (NCA).
5667.0 kHz	I	MA, FAE	International HF (MID).
5670.0 kHz	I	MA, FAE	International HF (EA).
5680.0 kHz	F, M, O	MA1, FAC, FAR	Search and rescue communications.
5687.5 kHz	I	AX	Alaska.
6532.0 kHz	I	MA, FAE	International HF (CWP).
6535.0 kHz	I	MA, FAE	International HF (SAT).
6550.0 kHz	J	MA, FAT	
6556.0 kHz	I	MA, FAE	International HF (SEA).
6559.0 kHz	I	MA, FAE	International HF (AFI).
6562.0 kHz	I	MA, FAE	International HF (CWP).
6571.0 kHz	I	MA, FAE	International HF (EA).
6574.0 kHz	I	MA, FAE	International HF (AFI).
6577.0 kHz	I	MA, FAE	International HF (CAR).
6580.0 kHz	I	MA, FAE	Domestic HF.
6586.0 kHz	I	MA, FAE	International HF (CAR).
6592.0 kHz	I	MA, FAE	International HF (NCA).
6598.0 kHz	I	MA, FAE	International HF (EUR).
6604.0 kHz	I	MA, FAE	Domestic HF.
6622.0 kHz	I	MA, FAE	International HF (NAT).
6625.0 kHz	I	MA, FAE	International HF (MID).
6628.0 kHz	I	MA, FAE	International HF (NAT).
6631.0 kHz	I	MA, FAE	International HF (MID).
6637.0 kHz	I	MA, FAE	Long distance operational control.
6640.0 kHz	I	MA, FAE	Long distance operational control.
6649.0 kHz	I	MA, FAE	International HF (SAM).
6655.0 kHz	I	MA, FAE	International HF (NP).
6661.0 kHz	I	MA, FAE	International HF (NP).
6673.0 kHz	I	MA, FAE	International HF (AFI, CEP).
8015.0 kHz	I	AX	Alaska.
8364.0 kHz	F	MA.	Search and rescue communications.

Frequency or frequency band	Subpart	Class of station	Remarks
8822.5 kHz	J	MA, FAT	
8825.5 kHz	I	MA, FAE	International HF (NAT).
8831.5 kHz	I	MA, FAE	International HF (NAT).
8843.5 kHz	I	MA, FAE	International HF (CEP).
8846.5 kHz	I	MA, FAE	International HF (CAR).
8855.5 kHz	I	MA, FAE	Domestic HF; International HF (SAM).
8861.5 kHz	I	MA, FAE	International HF (SAT).
8864.5 kHz	I	MA, FAE	International HF (NAT).
8867.5 kHz	I	MA, FAE	International HF (SP).
8876.5 kHz	I	MA, FAE	Domestic HF.
8879.5 kHz	I	MA, FAE	International HF (NO, NAT).
8891.5 kHz	I	MA, FAE	International HF (NAT).
8894.5 kHz	I	MA, FAE	International HF (AFI).
8897.5 kHz	I	MA, FAE	International HF (EA).
8903.5 kHz	I	MA, FAE	International HF (AFI, CWP)
8906.5 kHz	I	MA, FAE	International HF (NAT).
8918.5 kHz	I	MA, FAE	International HF (CAR, MID).
8930.5 kHz	I	MA, FAE	Long distance operational control.
8942.5 kHz	I	MA, FAE	International HF (SEA).
8951.5 kHz	I	MA, FAE	International HF (MID).
10018.5 kHz	I	MA, FAE	International HF (MID).
10024.5 kHz	I	MA, FAE	International HF (SAM).
10033.5 kHz	I	MA, FAE	Long distance operational control.
10042.5 kHz	I	MA, FAE	International HF (EA).
10045.5 kHz	J	MA, FAT	
10048.5 kHz	I	MA, FAE	International HF (NP).
10057.5 kHz	I	MA, FAE	International HF (CEP).
10066.5 kHz	I	MA, FAE	Domestic HF; International HF (SEA).
10075.5 kHz	I	MA, FAE	Long distance operational control.
10081.5 kHz	I	MA, FAE	International HF (CWP).
10084.5 kHz	I	MA, FAE	International HF (EUR, SP).
10096.5 kHz	I	MA, FAE	International HF (NCA, SAM).
11279.5 kHz	I	MA, FAE	International HF (NAT).
11282.5 kHz	I	MA, FAE	International HF (CEP).
11288.5 kHz	J	MA, FAT	
11291.5 kHz	I	MA, FAE	International HF (SAT).
11300.5 kHz	I	MA, FAE	International HF (AFI).
11306.5 kHz	J	MA, FAT	
11309.5 kHz	I	MA, FAE	International HF (NAT).
11327.5 kHz	I	MA, FAE	International HF (SP).
11330.5 kHz	I	MA, FAE	International HF (AFI, NP).
11336.5 kHz	I	MA, FAE	International HF (NAT).
11342.5 kHz	I	MA, FAE	Long distance operational control.
11348.5 kHz	I	MA, FAE	Long distance operational control.
11357.5 kHz	I	MA, FAE	Domestic HF.
11360.5 kHz	I	MA, FAE	International HF (SAM).

	I	MA, FAE	Domestic HF.
11375.0 kHz	I	MA, FAE	International HF (MID).
11384.0 kHz	I	MA, FAE	International HF (CWP).
11387.0 kHz	I	MA, FAE	International HF (CAR).
11396.0 kHz	I	MA, FAE	International HF (CAR, EA, SEA).
13273.0 kHz	I	MA, FAE	International HF (AFI).
13288.0 kHz	I	MA, FAE	International HF (AFI, EUR, MID).
13291.0 kHz	I	MA, FAE	International HF (NAT).
13294.0 kHz	I	MA, FAE	International HF (AFI).
13297.0 kHz	I	MA, FAE	International HF (CAR, EA, SAM).
13300.0 kHz	I	MA, FAE	International HF (CEP, CWP, NP, SP).
13303.0 kHz	I	MA, FAE	International HF (EA, NCA).
13306.0 kHz	I	MA, FAE	International HF (INO, NAT).
13309.0 kHz	I	MA, FAE	International HF (EA, SEA).
13312.0 kHz	I, J	MA, FAE, FAT	International HF (MID); Flight test.
13315.0 kHz	I	MA, FAE	International HF (NCA, SAT).
13318.0 kHz	I	MA, FAE	International HF (SEA).
13330.0 kHz	I	MA, FAE	Long distance operational control.
13348.0 kHz	I	MA, FAE	Long distance operational control.
13357.0 kHz	I	MA, FAE	International HF (SAT).
17904.0 kHz	I	MA, FAE	International HF (CEP, CWP, NP, SP).
17907.0 kHz	I	MA, FAE	International HF (CAR, EA, SAM, SEA).
17925.0 kHz	I	MA, FAE	Long distance operational control.
17946.0 kHz	I	MA, FAE	International HF (NAT).
17955.0 kHz	I	MA, FAE	International HF (SAT).
17958.0 kHz	I	MA, FAE	International HF (NCA).
17961.0 kHz	I	MA, FAE	International HF (AFI, EUR, INO, MID).
17964.0 kHz	J	MA, FAT	
21931.0 kHz	J	MA, FAT	
21964.0 kHz	I	MA, FAE	Long distance operational control.
26618.5 kHz	R	MA, FAP	Civil Air Patrol.
26620.5 kHz	R	MA, FAP	Civil Air Patrol.
26621.5 kHz	R	MA, FAP	Civil Air Patrol.
72.020–75.980 MHz	P	FA, AXO	Operational fixed; 20 kHz spacing.
75.000 MHz	Q	RLA	Marker beacon.
108.000 MHz	Q	RLT	
108.000–117.950 MHz	Q	RLO	VHF omni-range.
108.050 MHz	Q	RLT	
108.100–111.950 MHz	Q	RLL	ILS localizer.
108.100 MHz	Q	RLT	
108.150 MHz	Q	RLT	
118.000–121.400 MHz	O	MA, FAC, FAW	25 kHz channel spacing.[9]
121.500 MHz	G, H, I, J, K, M, O	MA, FAU, FAE, FAT, FAS, FAC, FAM, FAP	Emergency and distress.
121.600–121.925 MHz	O, L, Q	MA, FAC, MOU, RLT	25 kHz channel spacing.

Frequency or frequency band	Subpart	Class of station	Remarks
121.950 MHz	K	FAS	
121.975 MHz	F	MA2, FAW	Air traffic control operations.
122.000 MHz	F	MA	Air carrier and private aircraft enroute flight advisory service provided by FAA.
122.025 MHz	F	MA2, FAW	Air traffic control operations.
122.050 MHz	F	MA	Air traffic control operations.
122.075 MHz	F	MA2, FAW	Air traffic control operations.
122.100 MHz	F, O	MA, FAC	Air traffic control operations.
122.125–122.675	F	MA2	Air traffic control operations; 25 kHz spacing.
122.700 MHz	G, L	MA, FAU, MOU	Unicom at airports with no control tower; Aeronautical utility stations.
122.725 MHz	G, L	MA2, FAU, MOU	Unicom at airports with no control tower; Aeronautical utility stations.
122.750 MHz	F	MA2	Private fixed wing aircraft air-to-air communications.
122.775 MHz	K	MA, FAS	
122.800 MHz	G, L	MA, FAU, MOU	Unicom at airports with no control tower; Aeronautical utility stations.
122.825 MHz	I	MA, FAE	Domestic VHF
122.850 MHz	H, K,	MA, FAM, FAS	
122.875 MHz	I	MA, FAE	Domestic VHF
122.900 MHz	F, H, L M	MA, FAR, FAM, MOU	
122.925 MHz	H	MA2, FAM	
122.950 MHz	G, L	MA2, FAU, MOU	Unicom at airports with no control tower; Aeronautical utility stations.
122.975 MHz	G, L	MA2, FAU, MOU	Unicom at airports with no control tower; Aeronautical utility stations.
123.000 MHz	G, L	MA, FAU, MOU	Unicom at airports with no control tower; Aeronautical utility stations.
123.025 MHz	F	MA2	Helicopter air-to-air communications; Air traffic control operations.
123.050 MHz	G, L	MA2, FAU, MOU	Unicom at airports with no control tower; Aeronautical utility stations.
123.075 MHz	G, L	MA2, FAU, MOU	Unicom at airports with no control tower; Aeronautical utility stations.
123.100 MHz	M, O	MA, FAC, FAR	
123.125 MHz	J	MA, FAT	Itinerant.
123.150 MHz	J	MA, FAT	Itinerant.
123.175 MHz	J	MA, FAT	Itinerant.
123.200 MHz	J	MA, FAT	
123.225 MHz	J	MA, FAT	
123.250 MHz	J	MA, FAT	
123.275 MHz	J	MA, FAT	
123.300 MHz	K	MA, FAS	
123.325 MHz	J	MA, FAT	
123.350 MHz	J	MA, FAT	
123.375 MHz	J	MA, FAT	
123.400 MHz	J	MA, FAT	Itinerant.
123.425 MHz	J	MA, FAT	
123.450 MHz	J	MA, FAT	
123.475 MHz	J	MA, FAT	
123.500 MHz	K	MA, FAS	
123.525 MHz	J	MA, FAT	
123.550 MHz	J	MA, FAT	
123.575 MHz	J	MA, FAT	Itinerant.

128.825–132.000 MHz	I	MA, FAE	Domestic VHF; 25 kHz channel spacing.
132.025–135.975 MHz	O	MA, FAC, FAW	25 kHz channel spacing.
136.000–136.075 MHz	O, S	MA, FAC, FAW	Air traffic control operations.
136.100 MHz			Reserved for future unicom or AWOS.
136.125–136.175 MHz	O, S	MA, FAC, FAW	Air traffic control operations.
136.200 MHz			Reserved for future unicom or AWOS.
136.225–136.250 MHz	O, S	MA, FAC, FAW	Air traffic control operations.
136.275 MHz			Reserved for future unicom or AWOS.
136.300–136.350 MHz	O, S	MA, FAC, FAW	Air traffic control operations.
136.375 MHz			Reserved for future unicom or AWOS.
136.400–136.450 MHz	O, S	MA, FAC, FAW	Air traffic control operations.
136.475 MHz			Reserved for future unicom or AWOS.
136.500–136.600 MHz	I	MA, FAE	Domestic VHF.
136.625 MHz	I	MA, FAE	Domestic VHF.
136.650 MHz	I	MA, FAE	Domestic VHF.
136.675 MHz	I	MA, FAE	Domestic VHF.
136.700 MHz	I	MA, FAE	Domestic VHF.
136.725 MHz	I	MA, FAE	Domestic VHF.
136.750 MHz	I	MA, FAE	Domestic VHF.
136.775 MHz	I	MA, FAE	Domestic VHF.
136.800 MHz	I	MA, FAE	Domestic VHF.
136.825 MHz	I	MA, FAE	Domestic VHF.
136.850 MHz	I	MA, FAE	Domestic VHF.
136.875 MHz	I	MA, FAE	Domestic VHF.
136.900 MHz	I	MA, FAE	Domestic VHF.
136.925 MHz	I	MA, FAE	Domestic VHF.
136.950 MHz	I	MA, FAE	Domestic VHF.
136.975 MHz	I	MA, FAE	Domestic VHF.
143.900 MHz	R	MA, FAP	Civil Air Patrol.
148.150 MHz	R	MA, FAP	Civil Air Patrol.
156.300 MHz	F	MA	For communications with ship stations under specific conditions.
156.375 MHz	F	MA	For communications with ship stations under specific conditions; Not authorized in New Oreleans vessel traffic service area.
156.400 MHz	F	MA	For communications with ship stations under specific conditions.
156.425 MHz	F	MA	For communications with ship stations under specific conditions.
156.450 MHz	F	MA	For communications with ship stations under specific conditions.
156.625 MHz	F	MA	For communications with ship stations under specific conditions.
156.800 MHz	F	MA	Distress, safety and calling frequency; For communications with ship stations under specific conditions.
156.900 MHz	F	MA	For communications with ship stations under specific conditions.
157.425 MHz	F	MA	For communications with commercial fishing vessels under specific conditions except in Great Lakes and St. Lawrence Seaway areas.
243.000 MHz	F	MA	Emergency and distress frequency for use of survival craft and emergency locator transmitters.
328.600–335.400 MHz	Q	RLG	ILS glide path.
334.550 MHz	Q	RLT	
334.700 MHz	Q	RLT	

Frequency or frequency band	Subpart	Class of station	Remarks
960–1215 MHz	F, Q	MA, RL	Electronic aids to air navigation.
978.000 MHz	Q	RLT	
979.000 MHz	Q	RLT	
1030.000 MHz	Q	RLT	
1104.000 MHz	Q	RLT	
979.000 MHz	Q	RLT	
1300–1350 MHz	F, Q	MA, RLS	Surveillance radars and transponders.
1435–1535 MHz	F, J	MA, FAT	Aeronautical telemetry and telecommand operations.
1559–1626.5 MHz	F, Q	MA, RL	Aeronautical radionavigation.
2310–2390 MHz	J	MA, FAT	Aeronautical telemetry and telecommand operations.
2700–2900 MHz	Q	RLS	Airport surveillance and weather radar.
4200–4400 MHz	F	MA	Radio altimeters.
5000–5250 MHz	Q	MA, RLW	Microwave landing system.
5031.000 MHz	Q	RLT	
5350–5470 MHz	F	MA	Airborne radars and associated airborne beacons.
8750–8850 MHz	F	MA	Airborne doppler radar.
9000–9200 MHz	Q	RLS	Land-based radar.
9300–9500 MHz	F, Q	MA	Airborne radars and associated airborne beacons.
13250–13400 MHz	F	MA	Airborne doppler radar.
14000–14400 MHz	F, Q	MA, RL	Aeronautical radionavigation.
15400–15700 MHz	Q	RL	Aeronautical radionavigation.
24250–25250 MHz	F, Q	MA, RL	Aeronautical radionavigation.
31800–33400 MHz	F, Q	MA, RL	Aeronautical radionavigation.

[53 FR 28940, Aug. 1, 1988, as amended at 54 FR 11721, Mar. 22, 1989; 55 FR 7333, Mar. 1, 1990; 55 FR 28628, July 12, 1990]

Subpart F—Aircraft Stations

§ 87.185 Scope of service.

(a) Aircraft stations must limit their communications to the necessities of safe, efficient, and economic operation of aircraft and the protection of life and property in the air, except as otherwise specifically provided in this part. Contact with an aeronautical land station must only be attempted when the aircraft is within the serivce area of the land station. however, aircraft stations may transmit advisory information on air traffic control, unicom or aeronautical multicom frequencies for the benefit and use of other stations monitoring these frequencies in accordance with FAA recommended traffic advisory practices.

(b) Aircraft public correspondence must make service available to all persons without discrimination and on reasonable demand, and must communicate without discrimination with any maritme public coast station or maritime mobile-satellite earth station.

(c) Public correspondence service may be carried on only by aircraft stations licensed to use maritime mobile or maritime mobile-satellite frequencies, and must follow the rules for public correspondence in part 80.

§ 87.187 Frequencies.

(a) Frequencies used for air-ground Communications are listed in subpart E. Aircraft stations may use frequencies assigned to Government or non-Government aeronautical stations or radionavigation land stations if the communications are within the aeronautical or radionavigation land station scope of service.

(b) 410 kHz is the international direction-finding frequency for use outside the continental United States.

(c) 457 kHz is an authorized working frequency for flights over the high seas.

(d) 500 kHz an international calling and distress frequency for aircraft on flights over the high seas. Except for distress, urgency or safety messages an aircraft station must not transmit on 500 kHz during the silence periods for three minutes twice each hour beginning at x h. 15 and x h.45 Coordinated Universal Time (u.t.c.).

(e) The frequency 2182 khz is an international distress and calling frequency for use by ship, aircraft and survival craft stations. Aircraft stations must use J3E emission when operating on 2182 kHz and communicating with domestic public and private coast stations. The emission H3E may be used when communicating with foreign coast and ship stations.

(f) The frequencies 3023 kHz, 5680 kHz, 122.900 MHz and 123.100 MHz are authorized for use by aircraft engaged in seach and rescue activities in accordance with Subpart M. These frequencies may be used for air-air and air-ground communications.

(g) The frequency 4125 kHz may be used for distress and safety communications between aircraft and ship and coast maritime mobile stations.

(h) The frequency 8364.0 kHz is authorized for use of survival craft for search and rescue communications with stations in the maritime mobile service.

(i) The frequencies in the band 121.975-122.675 MHz are authorized for use by private aircraft of air traffic control operations.

(1) The frequencies 122.00 and 122.050 MHz are authorized for use by air carrier and private aircraft stations for enroute flight advisory service (EFAS) provided by the FAA;

(2) The frequency 122.100 MHz is authorized for use by air carrier aircraft stations for air traffic control operations at locations in Alaska where other frequencies are not available for air traffic control.

(j) The frequency 122.750 MHz is authoried for use by private fixed wing aircraft for air-air communications. The frequency 123.025 MHz is authorized for use by helicopters for air-air Communications.

(k) The frequencies 121.500 MHz and 243.000 MHz are emergency and distress frequencies available for use by survival craft stations, emergency locator transmitters and equipment used for survival purposes. Use of 121.500 MHz and 243.000 MHz shall be limited to transmission of signals and communications for survivial purposes. Types A2A, A3E, or A3N emissions may be employed, except in the case of emergency locator transmitters where only A3N is permitted.

(l) The frequencies 156.300, 156.375, 156,400, 156,425, 156.450, 156.625, 156.800 156.900 and 157.425 MHz may be used by aircraft stations to communicate with ship stations in accordance with Part 80 and the following conditions:

(1) The altitude of aircraft stations must not exceed 1000 feet, except for reconnaissance aircraft participating in icebreaking operations where an altitude of 1,500 feet is allowed;

(2) Aircraft station transmitter power must not exceed five watts;

(3) The frequency 156.300 MHz may be used for safety purposes only. The frequency 156.800 MHz may be used for distress, safety and calling purposes only.

(4) Except in the Great Lakes and along the St. Lawrence Seaway the frequency 157.425 MHz is available for communications with commerical fishing vessels.

(5) The frequency 156.375 MHz cannot be used in the New Orleans, LA, VTS protection area. No harmful interference shall be caused to the VTS.

(m) The frequency band 960-1215 MHz is for the use of airborne electronic aids to air navigation and directly associated land stations.

(n) The frequency band 1300-1350 MHz is for surveillance radar stations and associated airborne transponders.

(o) The frequency band 1435-1535 MHz is available for telemetering and telecommand associated with the flight testing of aircraft, missiles, or related major components. This includes launching into space, reentry into the earth's atmosphere and incidental orbiting prior to reentry. The following frequencies are shared with flight telemetering mobile stations: 1444.5, 1453.5, 1501.5, 1515.5, 1524.5 and 1525.5 MHz. See 87.303(d)

(p) The frequency band 1559-1626.5 MHz is available for airborne electronic aids to air navigation and any associated land station.

(q) The frequency band 4200-4400 MHz is reserved exclusively for radio altimeters.

(r) The frequency band 5350-5470 MHz in the aeronautical radionavigation service is limited to airborne radars and associated airborne beacons.

(s) The frequency band 8750-8850 MHz is available for use by airborne doppler radars in the aeronautical radionavigation service only on the condition that they must accept any interference which may be experienced from stations in the radiolocation service in the band 8500-10,000 MHz.

(t) The frequency band 9300-9500 MHz is limited to airborne radars and associated airborne beacons.

(u) The frequency band 13250-13400 MHz available for airborne doppler radar use.

(v) The frequency bands 14000-14400, 24250-25250, 31800-33400 MHz are available for airborne radionavigation devices.

(w) Brief keyed RF signals (keying the transmitter by momentarily depressing the microphone "push-to-talk" button) may be transmitted from aircraft for the control of airport lights on the following frequencies:

(1) Any air traffic control frequency listed in § 87.421.

(2) FAA Flight Service Station frequencies 121.975-122.675 MHz.

(3) The unicom frequencies 122.700, 122.725, 122.800, 122.950, 122.975, 123.000, 123.050 and 123.075 MHz.

(4) Aviation support station frequencies listed in § 87.232(b): 121.950, 123.300 and 123.500 MHz if the frequency is assigned to a station at the airport and no harmful interference is caused to voice communications. If no such station is located at the concerned airport, aircraft may use one of the aviation support station frequencies for the control of airport lights.

(5) The frequency 122.9 MHz when it is used as the common traffic advisory frequency at the concerned airport.

(x) Frequencies for public correspondence between ships and public coast stations in the maritime mobile service (except frequencies in the 156-174 MHz band) and coast earth stations in the maritime mobile-satellite rvice are available for public corre- ondence between aircraft and public ast stations and coast earth stations, spectively. The transmission of blic correspondence from aircraft ust not cause interference to mari- ne communications.

(y) Frequencies in the 454.675- 9.975 MHz band are available in the ublic Mobile Radio Service (part 22) r use on board aircraft for communi- tions with land mobile stations hich are interconnected to the na- onwide public telephone system.

(z) The frequencies 121.950 MHz, 22.750 MHz and 122.850 MHz are au- horized for air-to-air use for all air- raft from 6000 feet mean sea level up and including 10,500 feet mean sea vel in the vicinity of Grand Canyon ational Park in Arizona within the rea bounded by the following coordi- ates:

6-28-00 N. Lat;	112-47-00 W. long.
6-28-00 N. Lat;	112-48-00 W. long.
5-50-00 N. Lat;	112-48-00 W. long.
5-43-00 N. Lat;	112-47-00 W. long.

53 FR 28940, Aug. 1, 1988, as amended at 54 R 23214, May 31, 1989; 54 FR 49995, Dec. , 1989; 55 FR 7333, Mar. 1, 1990]

87.189 Requirements for public correspondence equipment and operations.

(a) Transmitters used for public cor- espondence by aircraft stations must e type accepted by the Commission in onformity with part 80 of this chap- er.

(b) A continuous watch must be aintained on the frequencies used or flight safety and regularity while ublic correspondence communica- ions are being handled.

(c) All communications of stations in the aeronautical mobile service have priority over public correspondence.

(d) Transmission of public correspondence must be suspended when such operation will delay or interfere with message pertaining to safety of life and property or regularity of flight, or when ordered by the captain of the aircraft.

§ 87.191 Foreign aircraft stations.

(a) Aircraft of member States of the International Civil Aviation Organization may carry and operate radio transmitters in the United States airspace only if a license has been issued by the State in which the aircraft is registered and the flight crew is provided with a radio operator license of the proper class, issued or recognized by the State in which the aircraft is registered. The use of radio transmitters in the United States airspace must comply with these rules and regulations.

(b) Notwithstanding paragraph (a) of this section where an agreement with a foreign government has been entered into with respect to aircraft registered in the United States but operated by an aircraft operator who is subject to regulation by that foreign government, the aircraft radio station license and aircraft radio operator license may be issued by such foreign government.

EMERGENCY LOCATOR TRANSMITTERS

§ 87.193 Scope of service.

Transmissions by emergency locator transmitters (ELTs) are intended to be actuated manually or automatically and operated automatically as part of an aircraft or a survival craft station as a locating aid for survival purposes.

§ 87.195 Frequencies.

(a) ELTs transmit on the frequency 121.500 MHz, using A3E, A3N or NON emission.

(b) The frequency 243.000 MHz is an emergency and distress frequency available for use by survival craft stations, ELTs and equipment used for survival purposes which are also equipped to transmit on the frequency 121.500 MHz. Use of 243.000 MHz must be limited to transmission of signals and communications for survival purposes. In the case of ELTs use of A3E, A3N or NON emission is permitted.

§ 87.197 ELT test procedures.

ELT testing must avoid outside radiation. Bench and ground tests conducted outside of an RF-shielded enclosure must be conducted with the ELT terminated into a dummy load.

Subpart G—Aeronautical Advisory Stations (Unicoms)

§ 87.213 Scope of service.

(a) An aeronautical advisory station (unicom) must provide service to any aircraft station upon request and without discrimination. A unicom must provide impartial information concerning available ground services.

(b)(1) Unicom transmissions must be limited to the necessities of safe and expeditious operation of aircraft such as condition of runways, types of fuel available, wind conditions, weather information, dispatching, or other necessary information. At any airport at which a control tower, control tower remote communications outlet station (RCO) or FAA flight service station is located, unicoms must not transmit information pertaining to the conditions of runways, wind conditions, or weather information during the hours of operation of the control tower, RCO or FAA service station.

(2) On a secondary basis, unicoms may transmit communications which pertain to the efficient portal-to-portal transit of an aircraft, such as requests for ground transportation, food or lodging.

(3) Communications between unicoms and air carrier must be limited to the necessities of safety of life and property.

(4) Unicoms may communicate with aeronautical utility stations and ground vehicles concerning runway conditions and safety hazards on the airport when neither a control tower nor FAA flight service station is in operation.

(c) Unicoms must not be used for air traffic control (ATC) purposes other than to relay ATC information between the pilot and air traffic controller. Relaying of ATC information is limited to the following:

(1) Revisions of proposed departure time;

(2) Takeoff, arrival or flight plan cancellation time;

(3) ATC clearances, provided a letter of agreement is obtained from the FAA by the licensee of the unicom.

[53 FR 28940, Aug. 1, 1988, as amended at 55 FR 30464, July 26, 1990]

§ 87.215 Supplemental Eligibility.

(a) A unicom and any associated dispatch or control points must be located on the airport to be served.

(b) Only one unicom will be authorized to operate at an airport which does not have a control tower, RCO or FAA flight service station. At an airport which has a part-time or full-time control tower, RCO or FAA flight service station, the one unicom limitation does not apply and the airport operator and all aviation services organizations may be licensed to operate a unicom on the assigned frequency.

(c) At an airport where only one unicom may be licensed, when the Commission believes that the unicom has been abandoned or has ceased operation, another unicom may be licensed on an interim basis pending final determination of the status of the original unicom. An applicant for an interim license must notify the present licensee and must comply with the notice requirements of paragraph (d) of this section.

(d) An applicant for a unicom license, renewal or modification of frequency assignment at an airport which does not have a control tower, RCO or FAA flight service station must notify in writing the owner of the airport and all aviation service organizations located at the airport. The notice must include the applicant's name and address, the name of the airport and a statement that the applicant intends to file an application with the Commission for a unicom. The notice must be given within the ten days preceding the filing of the application with the Commission. Each applicant must submit a statement that either notice has been given and include the date of notification, or notice is not required because the applicant owns the airport and there are no organizations that should be notified.

[53 FR 28940, Aug. 1, 1988, as amended at 55 FR 30464, July 26, 1990]

§ 87.217 Frequencies.

(a) Only one unicom frequency will be assigned at any one airport. The Commission will assign a frequency based on maximum geographic co-channel separation. However, appli-

nts may request a particular fre-
ency which will be taken into con-
leration when the assignment is
ade. The frequencies assignable to
icoms are:

1) 122.950 MHz at airports which
ve a full-time control tower, full-
ne RCO or full time FAA flight serv-
station.

2) 122.700, 122.725, 122.800, 122.975,
3.000, 123.050 or 123.075 MHz at all
ner airports.

b) 121.500 MHz: emergency and dis-
ss only.

FR 28940, Aug. 1, 1988, as amended at 54
11721, Mar. 22, 1989; 55 FR 30464, July
1990]

ubpart H—Aeronautical Multicom Stations

.237 Scope of service.

a) The communications of an aero-
utical multicom station (multicom)
st pertain to activities of a tempo-
y, seasonal or emergency nature in-
ving aircraft in flight. Communica-
ns are limited to directing or coordi-
ing ground activities from the air
aerial activities from the ground.
-to-air communications will be au-
rized if the communications are di-
tly connected with the air-to-
und or ground-to-air activities de-
bed above. Multicom communica-
ns must not include those air/
und communications provided for
where in this part.

) If there is not unicom and an ap-
ant is unable to meet the require-
nts for a unicom license, the appli-
t will be eligible for a multicom li-
se.

) The multicom license becomes in-
d when a unicom is established at
landing area.

) Multicoms must not be used for
C purposes other than the relay of
C information between the pilot
air traffic controller. Relaying of
C information is limited to the fol-
ng:

Revisions of proposed departure
e;

) Takeoff, arrival flight plan can-
ation time;

i) ATC clearances, provided a
er of agreement is obtained from
the FAA by the licensee of the multicom.

(3) Communications by a multicom must be limited to the safe and expeditious operation of private aircraft, pertaining to the conditions of runways, types of fuel available, wind conditions, weather information, dispatching or other information. On a secondary basis, multicoms may transmit communictions which pertain to efficient portal-to-portal transit of an aircraft such as requests for ground transportation, food or lodging.

§ 87.239 Supplemental eligibility.

An application for a multicom must include a showing demonstrating why such a station is necessary, based on the scope of service defined above.

§ 87.241 Frequencies.

(a) 121.500 MHz: emergency and distress only;

(b) 122.850 or 122.900 MHz;

(c) 122.925 MHz: available for assignment to communicate with aircraft when coordinating foresty management and fire suppression, fish and game management and protection, and environmental monitoring and protection.

Subpart I—Aeronautical Enroute and Aeronautical Fixed Stations

AERONAUTICAL ENROUTE STATIONS

§ 87.261 Scope of service.

(a) Aeronautical enroute stations provide operational control communications to aircraft along domestic or international air routes. Operational control communications include the safe, efficient and economical operation of aircraft, such as fuel, weather, position reports, aircraft performance, and essential services and supplies. Public correspondence is prohibited.

(b) Service must be provided to any aircraft station licensee who makes cooperative arrangements for the operation, maintenance and liability of the stations which are to furnish enroute service. In emergency or distress situations service must be provided without prior arrangements.

(c) Except in Alaska, only one aeronautical enroute station licensee will be authorized at any one location. In Alaska, only one aeronautical enroute station licensee in the domestic service and one aeronautical enroute station licensee in the international service will be authorized at any one location. (Because enroute stations may provide service over a large area containing a number of air routes or only provide communications in the local area of an airport, location here means the area which can be adequately served by the particular station.)

(d) In Alaska, only stations which serve scheduled air carriers will be licensed to operate aeronautical enroute stations. Applicants must show that the station will provide communications only along routes served by scheduled air carriers.

§ 87.263 Frequencies.

(a) *Domestic VHF service.* (1) The frequencies in the 128.825–132.000 MHz band and the frequencies 136.500 MHz, 136.525 MHz, 136.550 MHz, 136.575 MHz, 136.600 MHz, 136.650 MHz, 136.700 MHz, 136.750 MHz, 136.800 MHz, 136.850 MHz, 136.900 MHz and 136.950 MHz are available to serve domestic routes. The frequencies 136.625 MHz, 136.675 MHz, 136.725 MHz 136.775 MHz, 136.825 MHz, 136.875 MHz, 136.925 MHz and 136.975 MHz are also available to enroute stations located at least 288 km (180 miles) from the Gulf of Mexico shoreline (outside the Gulf of Mexico Region). Frequency assignments are based on 25 kHz spacing. Use of these frequencies must be compatible with existing operations and must be in accordance with pertinent international treaties and agreements.

(2) A system or network of interconnected enroute stations may employ offset carrier techniques on the frequencies listed in paragraph (a)(1). The carrier frequencies of the individual transmitters must not be offset by more than ±8kHz.

(3) The frequencies 122.825 and 122.875 MHz are available for assignment to enroute stations which provide local area service to aircraft approaching or departing a particular airport. These frequencies will be assigned without regard to the restrictions contained in § 87.261 (c) and (d). Only organizations operating aircraft with a maximum capacity of 56 passengers or 18,000 pounds cargo will be authorized use of these enroute frequencies.

(4) In Alaska, the frequencies 131.500, 131.600, 131.800 and 131.900 MHz may be assigned to aeronautical enroute stations without regard to the restrictions contained in § 87.261 (c) and (d).

(5) The frequencies 136.625 MHz, 136.675 MHz, 136.725 MHz, 136.775 MHz, 136.825 MHz, 136.875 MHz, 136.925 MHz and 136.975 MHz are available in the Gulf of Mexico Region to serve domestic routes over the Gulf of Mexico and adjacent coastal areas. Assignments of these eight frequencies in the Gulf of Mexico Region are not subject to the conditions contained in section 87.261(c) and paragraph (a)(2) of this section. Frequency assignments are based on 25 kHz spacing. Use of these frequencies must be compatible with existing operations and must be in accordance With pertinent international treaties and agreements. For the purpose of this paragraph, the Gulf of Mexico Region is defined as an area bounded on the east, north and west by a line 288 km (180 miles) inland from the Gulf of Mexico shoreline.

(b) *Domestic HF service.* (1) Regular use of high frequencies for aeronautical enroute or any aeronautical mobile (R) communications in the domestic service within the continental United States (excluding Alaska) will not be authorized.

(2) These frequencies (carrier) are available for assignment to serve aircraft operating in support of offshore drilling operations in open sea areas beyond the range of VHF propagation:

kHz	
2878.0	4672.0
3019.0	5463.0
3434.0	5508.0

(3) Alaska: The following frequencies (carrier) are available for assignment to serve domestic air routes in the Alaska area:

(i) *Throughout Alaska:* Shared with he FAA and assigned where an applicant shows the need for a service not provided by the FAA.

kHz	
866.0	5631.0

(ii) *Alaska Aleutian chain and feeders.*

kHz	
2911.0	8855.0
2956.0	10066.0
5496.0	11363.0
6580.0	

(iii) *Central and Southeast Alaska and feeders.*

kHz	
2875.0	6580.0
2911.0	6604.0
3470.0	8876.0
5484.0	11357.0

(iv) The following frequencies (carrier) are available to enroute stations in Alaska without regard to the restrictions contained in § 87.261 (c) or (d). These frequencies may also be used for communications between enroute stations concerning matters directly affecting aircraft with which they are engaged. Enroute stations located at an uncontrolled airport shall not transmit information concerning runway, wind or weather conditions during the operating hours of a unicom.

kHz	
3449.0	5472.0
5167.5 [1]	5490.0

[1] The frequency 5167.5 kHz is available to any station for emergency communications in Alaska. No airborne operations are permitted. Peak envelope power of stations operating on this frequency must not exceed 150 watts. This frequency may also be used by Alaska private fixed stations for calling purposes, but only for establishing communications.

(c) *International VHF service.* Frequencies in the 128.825–132.000 and 136.000–137.000 MHz bands are available to enroute stations serving international flight operations. Frequency assignments are based on 25 kHz channel spacing. Proposed operations must be compatible with existing operations in the band.

(d) *International HF service.* High frequencies (carrier) available to enroute stations serving international flight operations on the Major World Air Route Areas (MWARA's), as defined in the international Radio Regulations and the ICAO Assignment Plan, are:

(1) Central East Pacific (CEP):

kHz	
2869.0	8843.0
3413.0	10057.0
4657.0	11282.0
5547.0	13300.0
5574.0	17904.0
6673.0	

(2) Central West Pacific (CWP):

kHz	
2998.0	6562.0
3455.0	8903.0
4666.0	10081.0
5652.0	11384.0
5661.0	13300.0
6532.0	17904.0

(3) North Pacific (NP):

kHz	
2932.0	10048.0
5628.0	11330.0
6655.0	13300.0
6661.0	17904.0

(4) South Pacific (SP):

kHz	
3467.0	10084.0
5559.0	11327.0
5643.0	13300.0
8867.0	17904.0

(5) North Atlantic (NAT):

kHz	
2872.0	8825.0
2899.0	8831.0
2962.0	8864.0
2971.0	8879.0
3016.0	8891.0
3476.0	8906.0
4675.0	11279.0
5598.0	11309.0
5616.0	11336.0
5649.0	13291.0
6622.0	13306.0
6628.0	17946.0

(6) Europe (EUR):

kHz

3479.0
5661.0
6598.0
10084.0
13288.0
17961.0

(7) South America (SAM):

kHz

2944.0
3479.0
4669.0
5526.0
6649.0
8955.0
10024.0
10096.0
11360.0
13297.0
17907.0

(8) South Atlantic (SAT):

kHz

2854.0
2935.0
3452.0
5565.0
6535.0
8861.0
11291.0
13315.0
13357.0
17955.0

(9) Southeast Asia (SEA):

kHz

3470.0
3485.0
5649.0
5655.0
6556.0
8942.0
10066.0
11396.0
13309.0
13318.0
17907.0

(10) East Asia (EA):

kHz

3016.0
3485.0
3491.0
5655.0
5670.0
6571.0
8897.0
10042.0
11396.0
13297.0
13303.0
13309.0
17907.0

(11) Middle East (MID):

kHz

2944.0
2992.0
3467.0
3473.0
4669.0
5658.0
5667.0
6625.0
6631.0
8918.0
8951.0
10018.0
11375.0
13288.0
13312.0
17961.0

(12) Africa (AFI):

kHz

2851.0
2878.0
3419.0
3425.0
3467.0
4657.0
5493.0
5652.0
5658.0
6559.0
6574.0
6673.0
8894.0
8903.0
8894.0
11300.0
11330.0
13273.0
13288.0
13294.0
17961.0

(13) Indian Ocean (INO):

kHz

3476.0
5634.0
8879.0
13306.0
17961.0

(14) North Central Asia (NCA):

kHz

3004.0
3019.0
4678.0
5646.0
5664.0
6592.0
10096.0
13303.0
13315.0
17958.0

(15) Caribbean (CAR):

kHz

2887.0
3455.0
5520.0
5550.0
6577.0
6586.0
8846.0
8918.0
11387.0
11396.0
13297.0
17907.0

(e) *Long distance operational control*. Long distance operational control frequencies provide communications between aeronautical enroute stations and aircraft stations anywhere in the world for control of the regularity and efficiency of flight and safety of aircraft. World-wide frequencies are not assigned by administrations for MWARA and Regional and Domestic Air Route Area (RDARA).

kHz

3013.0
3494.0
5529.0
5538.0
6637.0
6640.0
8933.0
10033.0
10075.0
11342.0
11348.0
13330.0
13348.0
17925.0
21964.0

(f) *121.500 MHz:* Emergency and dis- ress only.

53 FR 28940, Aug. 1, 1988, as amended at 54 R 11721, Mar. 22, 1989; 55 FR 28628, July 2, 1990]

87.265 Administrative communications.

Domestic VHF aeronautical enroute tations authorized to use A9W emis- ion on any frequency listed in 87.263(a)(1) or § 87.263(a)(3) may ransmit digital administrative com- munications on a secondary basis, in ddition to the operational and con- rol communications routinely permit- ted under § 87.261(a) above. Such sec- ondary administrative communications must directly relate to the business of a participating aircraft operator in providing travel and transportation services to the flying public or to the travel, transportation or scheduling activities of the aircraft operator itself. Stations transmitting administrative communications must provide absolute priority for operational control and other safety communications by means of an automatic priority control system.

[54 FR 11721, Mar. 22, 1989]

AERONAUTICAL FIXED STATIONS

§ 87.275 Scope of service.

Aeronautical fixed stations provide non-public point-to-point communications service pertaining to safety, regularity and economy of flight. These stations must transmit, without discrimination, messages from aircraft which have entered into cooperative arrangements governing the operation and maintenance of such stations. Aeronautical fixed station licensees are required to transmit, without charge or discrimination, all emergency communications.

§ 87.277 Supplemental eligibility.

Aeronautical fixed station licenses will only be issued to the licensees of associated aeronautical enroute stations. Aeronautical fixed station licenses will not be issued where adequate land line facilities are available.

§ 87.279 Frequencies.

(a) *United States (except Alaska).* The applicant must request specific frequencies in accordance with § 2.106 of this chapter. The Commission will determine the suitability of the applicant's selection based on the probability of interference to and from existing services assigned on the same or adjacent frequencies. All new assignments of frequencies will be subject to such conditions as may be required to minimize the possibility of harmful interference to existing services.

(b) *Alaska.* (1) Only stations which serve scheduled air carriers will be licensed. Applicants must show that the station will provide communications only along routes served by the scheduled operations of such carriers.

(2) The following frequencies are available in Alaska. These frequencies will only be licensed in conjunction with licenses for use of the aeronautical enroute frequencies specified in § 87.263(c).

kHz	
2648.0	5310.0
4645.0	5887.5
4947.5	8015.0
5122.5	

(c) *Gulf of Mexico.* In addition to the provisions of paragraph (a) of this section, the frequencies 4550.0 and 5036.0 kHz are available in the Gulf of Mexico.

Subpart J—Flight Test Stations

§ 87.299 Scope of service.

The use of flight test stations is restricted to the transmission of necessary information or instructions relating directly to tests of aircraft or components thereof.

§ 87.301 Supplemental eligibility.

(a) The following entities are eligible for flight test station licenses:

(1) Manufacturers of aircraft or major aircraft components;

(2) A parent corporation or its subsidiary if either corporation is a manufacturer of aircraft or major aircraft components; or

(3) Educational institutions and persons primarily engaged in the design, development, modification, and flight test evaluation of aircraft or major aircraft components.

(b) Each application must be accompanied by a statement containing facts sufficient to establish the applicant's eligibility under the criteria in paragraph (a) of this section.

§ 87.303 Frequencies.

(a) These frequencies are available for assignment to flight test land and aircraft stations:

kHz	MHz	MHz	MHz
3281.0[1]	123.175[3]	123.225[3]	123.400[2]
	123.200[3]	123.375[3]	123.450[3]

(b) These additional frequencies are available for assignment only to flight test stations of aircraft manufacturers:

MHz	MHz	MHz	MHz
123.125[3]	123.275[3]	S123.425[3]	123.550[3]
123.150[3]	123.325[3]	S123.475[3]	123.575[3]
123.250[3]	123.350[3]	S123.525[3]	

[1] When R3E, H3E or J3E emission is used, the assigned frequency will be 3282.4 kHz (3281.0 kHz carrier frequency).

[2] This frequency is available only to itinerant stations that have a requirement to be periodically transferred to various locations.

[3] Mobile station operations on these frequencies are limited to an area within 200 miles of an associated flight test land station.

(c) These frequencies are available for equipment test, emergency and backup use with aircraft beyond the range of VHF propagation. Either H2B, J3E, J7B or J9W emission may be used.

Frequencies (carrier) available kHz:

kHz	
2851.0	8822.0
3004.0	10045.0
3443.0	11288.0
5451.0	11306.0
5469.0	13312.0
5571.0	17964.0
6550.0	21931.0

(d)(1) Frequencies in the bands 1435-1535 and 2310-2390 MHz are assigned primarily for telemetry and telecommand operations associated with the flight testing of manned or unmanned aircraft and missiles, or their major components. Permissible uses include telemetery and telecommand transmissions associated with the launching and reentry into the earth's atmosphere as well as any incidental orbiting prior to reentry of manned or unmanned objects undergoing flight tests. In the 1435-1535 MHz band, the following frequencies are shared with flight telemetering mobile stations: 1444.5, 1453.5, 1501.5, 1515.5, 1524.5 and 1525.5 MHz. In the 2310-2390 MHz band, the following frequencies may be assigned on a co-equal basis for telemetering and associated telecommand operations in fully operational of expendable and re-usable launch vehicles whether or not such operations involve flight testing: 2312.5, 2332.5, 2352.5, 2364.5, 2370.5 and 2382.5 MHz. In the 2310-2390 MHz band, all other telemetry and telecommand uses are secondary. The Maritime Mobile-Satellite Service will be the only service in the 1530-1535 MHz band after January 1, 1990.

(2) The authorized bandwidths for stations operating in the bands 1435.000-1535.000 and 2310.000-2390.000 MHz are normally 1, 3 or 5 MHz. Applications for greater bandwidths will be considered in accordance with the provisions of § 87.135. Each assignment will be centered on a frequency between 1435.500 and 1534.500 and 2310.500 and 2389.500 MHz, with 1 MHz channel spacing.

(e) 121.500 MHz: Emergency and distress only.

[53 FR 28940, Aug. 1, 1988, as amended at 54 FR 11721, Mar. 22, 1989; 55 FR 4175, Feb. 7, 1990]

§ 87.305 Frequency coordination.

(a)(1) Each application for a new station license, renewal or modification of an existing license concerning flight test frequencies, except as provided in paragraph (b) of this section, must be accompanied by a statement from a frequency advisory committee. The committee must comment on the frequencies requested or the proposed changes in the authorized station and the probable interference to existing stations. The committee must consider all stations operating on the frequencies requested or assigned within 200 miles of the proposed area of operation and all prior coordinations and ssignments on the proposed requency(ies). The committee must lso recommend frequencies resulting n the minimum interference. The ommittee must coordinate in writing ll requests for frequencies or proosed operating changes in the 1435-535 MHz and 2310-2390 MHz bands ith the responsible Government Area requency Coordinators listed in the TIA "Manual of Regulations and rocedures for Federal Radio Frequency Management." In addition, ommittee recommendations may inlude comments on other technical actors and may contain recommended estrictions which it believes should ppear on the license.

(2) The frequency advisory committee must be organized to represent all ersons who are eligible for non-Governmment radio flight test stations. A tatement of organization service area nd composition of the committee must be submitted to the Commission or approval. The functions of any advisory committee are purely advisory o the applicant and the Commission, and its recommendations are not binding upon either the applicant or the Commission.

(b) These applications need not be accompanied by evidence of frequency coordination:

(1) Any application for modification not involving change in frequency(ies), power, emission, antenna height, antenna location or area of operation.

(2) Any application for 121.5 MHz.

[53 FR 28940, Aug. 1, 1988, as amended at 54 FR 11721, Mar. 22, 1989]

§ 87.307 Cooperative use of facilities.

(a) The Commission will license only one flight test land station per airport, except as provided in paragraph (d) of this section.

(b) Flight test land stations located at an airport are required to provide service without discrimination, on a cooperative maintenance basis, to anyone eligible for a flight test station license.

(c) When the licensee of a flight test land station intends to conduct flight tests at an area served by another flight test land station, which may result in interference, the licensees must coordinate their schedules in advance. If no agreement is reached, the Commission will determine the time division upon request by either licensee.

(d) An application for an additional flight test land station at an airport where such a station is already authorized must be accompanied by a factual showing which must include the following:

(1) Reasons why shared use of the currently licensed flight test land station is not possible; and

(2) Results of coordination with the current licensee of the flight test station at the airport demonstrating that an additional station can be accommodated without significant degradation of the reliability of existing facilities.

Subpart K—Aviation Support Stations

§ 87.319 Scope of service.

Aviation support stations are used for the following types of operations:

(a) Pilot training;

(b) Coordination of soaring activities between gliders, tow aircraft and land stations;

(c) Coordination of activities between free balloons or lighter-than-air aircraft and ground stations;

(d) Coordination between aircraft and aviation service organizations located on an airport concerning the safe and efficient portal-to-portal transit of the aircraft, such as the types of fuel and ground services available; and

(e) Promotion of safety of life and property.

§ 87.321 Supplemental eligibility.

Each application must be accompanied by a statement that the applicant is either the operator of a flying school or lighter-than-air aircraft, engaged in soaring or free ballooning activities, or the operator of an airport or an aviation service organization located on an airport.

§ 87.323 Frequencies.

(a) 121.500 MHz: Emergency and distress only.

(b) The frequencies 121.950, 123.300 and 123.500 MHz are available for assignment to aviation support stations used for pilot training, coordination of lighter-than-air aircraft operations, or coordination of soaring or free ballooning activities. Applicants for 121.950 MHz must coordinate their proposal with the appropriate FAA Regional Spectrum Management Office. A coordination statement must accompany the application. Applicants for aviation support land stations may request frequency(ies) based upon their eligibility although the Commission reserves the right to specify the frequency of assignment. Aviation support mobile stations will be assigned 123.300 and 123.500 MHz. However, aviation support mobile stations must operate only on a noninterference basis to communications between aircraft and aviation support land stations.

(c) The frequency 122.775 MHz and, secondary to aeronautical multicom stations, the frequency 122.850 MHz are available for assignment to aviation support stations. These frequencies may be used for communications between aviation service organizations and aircraft in the airport area. These frequencies must not be used for air traffic control purposes or to transmit information pertaining to runway, wind or weather conditions.

(d) The frequency 3281.0 kHz is available for assignment to aviation support stations used for coordination of lighter-than-air aircraft operations.

Subpart L—Aeronautical Utility Mobile Stations

§ 87.345 Scope of service.

Aeronautical utility mobile stations provide communications for vehicles operating on an airport movement area. An airport movement area is defined as the runways, taxiways and other areas utilized for taxiing, takeoff and landing of aircraft, exclusive of loading ramp and parking areas.

(a) An aeronautical utility mobile station must monitor its assigned frequency during periods of operation.

(b) At an airport which has a control tower, control tower remote communications outlet station (RCO) or FAA flight service station in operation, communications by an aeronautical utility mobile station are limited to the management of ground vehicular traffic.

(c) Aeronautical utility mobile stations which operate on the airport's unicom frequency or the frequency 122.900 MHz are authorized only to transmit information relating to safety, such as runway conditions and hazards on the airport. These stations are authorized primarily for monitoring communications from and to aircraft approaching or departing the airport.

(d) Transmissions by an aeronautical utility mobile station are subject to the control of the control tower, the FAA flight service station or the unicom, as appropriate. When requested by the control tower, the flight service station or the unicom, an aeronautical utility station must discontinue transmitting immediately.

(e) Communications between aeronautical utility mobile stations are not authorized.

[53 FR 28940, Aug. 1, 1988, as amended at 55 FR 7333, Mar. 1, 1990; 55 FR 30464, July 26, 1990]

§ 87.347 Supplemental eligibility.

(a) Aeronautical utility stations may transmit on unicom frequencies only at airports which have a unicom and a part-time or no control tower, an RCO or an FAA flight service station.

(b) An applicant for an aeronautical utility station operating on a unicom frequency or the frequency 122.900 MHz must:

(1) Demonstrate a need to routinely operate a ground vehicle on the airport movement area;

(2) Identify the vehicle(s) in which the station is to be located; and

(3) Either attach a statement showing that the applicant is the airport owner or operator, or a state or local governmental aeronautical agency; or attach a statement from the airport owner or operator granting permission to operate the vehicle on the airport movement area.

(c) An applicant for an aeronautical utility station requesting authority to transmit on the local control (tower) frequency or on the control tower remote communications outlet (RCO) frequency must attach a copy of a emorandum of agreement between he applicant and the Air Traffic Manager of the airport control tower that pproves the requested use of the ower or RCO frequency.

53 FR 28940, Aug. 1, 1988, as amended at 55 R 30464, July 26, 1990; 55 FR 30908, July 0, 1990]

87.349 Frequencies.

(a) The frequency assigned to an aeronautical utility station at an airport served by a control tower, RCO or FAA flight service station is the frequency used by the control tower for ground traffic control or by the flight service station for communications with vehicles. In addition to the ground control frequency, an aeronautical utility station at an airport served by a control tower or RCO may be assigned the tower or RCO frequency if the assignment is specifically approved by the FAA as provided for in § 87.347(c). The frequencies assigned are normally from the band 121.600–121.925 MHz.

(b) The frequency assigned to the unicom is available to aeronautical utility stations on a noninterference basis at airports which have a part-time control tower, part-time RCO or part-time FAA flight service station and a unicom.

(c) At airports which have a unicom but no control tower, RCO or FAA flight service station, the frequency assigned to the unicom is available to aeronautical utility stations on a noninterference basis. The frequencies available for assignment to unicoms are described in subpart G of this part.

(d) At airports which have no control tower, RCO, flight service station or unicom, the frequency 122.900 MHz is available for assignment to aeronautical utility stations.

[55 FR 30464, July 26, 1990, as amended at 55 FR 30908, July 30, 1990]

§ 87.351 Frequency changes.

When the aeronautical utility frequency is required to be changed because of an action by the FAA or the Commission (such as a change in the ground control of unicom frequency) the licensee must submit an application for modification to specify the new frequency within 10 days from the date the station begins operation on the new frequency. The licensee has temporary authority to use the new frequency from the date of the change pending receipt of the modified license.

Subpart M—Aeronautical Search and Rescue Stations

§ 87.371 Scope of service.

Aeronautical search and rescue land and mobile stations must be used only for communications with aircraft and other aeronautical search and rescue stations engaged in search and rescue activities. Aeronautical land search and rescue stations can be moved for temporary periods from a specified location to an area where actual or practice search and rescue operations are being conducted.

§ 87.373 Supplemental eligibility.

Licenses for aeronautical search and rescue stations will be granted only to governmental entities or private organizations chartered to perform aeronautical search and rescue functions.

§ 87.375 Frequencies.

(a) The frequency 123.100 MHz is available for assignment to aeronautical search and rescue stations for actual search and rescue missions. Each search and rescue station must be equipped to operate on this frequency.

(b) The frequency 122.900 MHz is available for assignment to aeronautical search and rescue stations for organized search and rescue training and for practice search and rescue missions.

(c) The frequencies 3023.0 kHz and 5680.0 kHz are available for assignment to aircraft and ship stations for search and rescue scene-of-action coordination, including communications with participating land stations. Ship stations communicating with aircraft stations must employ 2K80J3E emission.

(d) 121.500 MHz: Emergency and distress only.

Subpart N—Emergency Communications

§ 87.393 Scope of service.

This subpart provides the rules governing operation of stations in the Aviation Services during any national or local emergency situation constituting a threat to national security or safety of life and property. This subpart is consistent with the Aeronautical Emergency Communications System Plan for all Aviation Services licensees of the Commission which was developed pursuant to sections 1, 4(o), 301 and 303 of the Communications Act, and Executive Order 11490, as amended. This Plan provides for emergency communications to meet the requirements of the Plan for the Security Control of Air Traffic and Air Navigation Aids (SCATANA), Civil Reserve Air Fleet (CRAF), War Air Service Program (WASP) and, where applicable, State and Regional Disaster Airlift Planning (SARDA).

§ 87.395 Plan for the Security Control of Air Traffic and Air Navigation Aids (Short Title: SCATANA).

(a) The Plan for the Security Control of Air Traffic and Air Navigation Aids (SCATANA) is promulgated in furtherance of the Federal Aviation Act of 1958, as amended, the Communications Act and Executive Order 11490, as amended. SCATANA defines the responsibilities of the Commission for the security control of non-Federal air navigation aids.

(b) Under the responsibilities defined in SCATANA, an FCC Support Plan for the Security Control of Non-Federal Air Navigation Aids has been developed by the Commission. The FCC Support Plan defines responsibilities, procedures, and instructions in consonance with SCATANA which will effect control of non-Federal air navigation aids when SCATANA is implemented. It permits the use of such navigation aids by aircraft of military and civil agencies when SCATANA is implemented. The FCC Support Plan highlights those parts of SCATANA which deal specifically with non-Federal air navigation aids. SCATANA and the FCC Support Plan apply to radionavigation stations authorized by the Commission in the following manner:

(1) All licensees are subject to restrictions imposed by appropriate military authorities pursuant to SCATANA and the FCC Support Plan when an Air Defense Emergency or Defense Emergency exists or is imminent. The restrictions will be imposed through FAA Air Route Traffic Control Centers (ARTCCs).

(2) All licensees of aeronautical radionavigation (VOR/DME, ILS, MLS, LF and MF non-directional beacons) stations will comply with SCATANA implementation instructions from FAA ARTCCs as follows:

(i) Shut down the above navigation aids as directed. These instructions will permit time to land or disperse airborne aircraft, and will permit extension of time when the air traffic situation dictates.

(ii) Shut down as soon as possible stations which require more than five minutes control time, unless directed otherwise or unless such stations are essential for the handling of existing air traffic.

(iii) Operate aeronautical radionavigation stations to ensure that required stations, as indicated in flight plans, will be available for authorized aircraft flights.

(3) Licensees of aeronautical radionavigation stations will be notified of the reduction or removal of SCATANA restrictions by FAA ARTCCs when notice of the termination is issued.

(4) Licensees of aeronautical radionavigation stations may voluntarily participate in SCATANA tests as requested by an ARTCC. SCATANA testing must not interrupt the normal service of non-Federal air navigation aids.

§ 87.397 Emergency operations.

(a) The licensee of any land station in the Aviation services, during a local emergency involving the safety of life and property may communicate in a manner other than that specified in the license (See § 87.395). Such emergency operations may include operation at other locations or with equipment not specified in the license or by unlicensed personnel provided that:

(1) Such operations are under the control and supervision of the station licensee,

(2) The emergency use is discontinued as soon as practicable upon termination of the emergency,

(3) In no event shall any station transmit on frequencies other than or with power in excess of that specified in the license,

(4) The details of the emergency must be retained with the station license, and

(5) At a controlled airport these communications must be coordinated with the FAA.

(b) The unicom frequencies listed in Subpart G may also be used for communications with private aircraft engaged in organized civil defense activities in preparation for, during an enemy attack or immediately after an enemy attack. When used for these purposes, unicoms may be moved from place to place or operated at unspecified locations, except at landing areas served by other unicoms or control towers.

(c) In any case in which a license for unattended operation has been granted, the Commission may at any time, for national defense, modify the license.

Subpart O—Airport Control Tower Stations

§ 87.417 Scope of service.

(a) Airport control tower stations (control towers) and control tower remote communications outlet stations (RCOs) must limit their communications to the necessities of safe and expeditious operations of aircraft operating on or in the vicinity of the airport. Control towers and RCOs provide air traffic control services to aircraft landing, taking off and taxing on the airport as well as aircraft transiting the airport traffic area. Additionally, control towers and RCOs can provide air traffic control services to vehicles operating on airport movement areas (see subpart L of this part). Control towers and RCOs must serve all aircraft without discrimination. An RCO must be remotely operated from a control tower or other FAA control facility located at a nearby airport.

(b) A control tower must maintain a continuous watch on the following frequencies during the hours of operation:

121.500 MHz
3023.0 kHz (Alaska only)
5680.0 kHz (Alaska only)

The Commission may exempt from these watch requirements the licensee of an airport control tower station if a satisfactory showing has been made that such an exemption will not adversely affect life and property in the air.

[53 FR 28940, Aug. 1, 1988, as amended at 54 FR 11721, Mar. 22, 1989; 55 FR 30464, July 26, 1990]

§ 87.419 Supplemental eligibility.

(a) Only one control tower or RCO will be licensed at an airport.

(b) Each application for an RCO must be accompanied by a written statement from the appropriate FAA Regional Office approving the requested RCO operation.

[55 FR 30464, July 26, 1990]

§ 87.421 Frequencies.

The Commission will assign VHF frequencies after coordination with the FAA. Frequencies in the following bands are available to control towers and RCOs. Channel spacing is 25 kHz.

118.000-121.400 MHz
121.600-121.925 MHz
123.600-128.800 MHz
132.025-135.975 MHz

(a) The frequency 123.100 MHz is available for use by control towers and RCOs at special aeronautical events on the condition that no harmful interference is caused to search and rescue operations in the locale involved.

(b) Frequencies in the bands 200.0-285.0 and 325.0-405.0 kHz will only be assigned to control towers and RCOs authorized to operate on at least one VHF frequency, unless a showing has been made that elimination of VHF service will not adversely affect life and property in the air.

(c) Frequencies in the band 121.600-121.925 MHz are available to control towers and RCOs for communications with ground vehicles and aircraft on the ground. The antenna heights shall be restricted to the minimum necessary to achieve the required coverage. Channel spacing is 25 kHz.

(d) 121.500 MHz: emergency and distress only.

[53 FR 28940, Aug. 1, 1988, as amended at 55 FR 30464, July 26, 1990]

§ 87.423 Hours of operation.

The control tower must render a communications service 24 hours a day unless a satisfactory showing has been made that elimination of such service will not adversely affect life and property in the air.

§ 87.425 Interference.

Control towers and RCOs must not cause harmful interference to control towers or RCOs at adjacent airports. If interference between adjacent control towers or RCOs exists, the Commission will direct the licensees how to eliminate the interference.

[55 FR 30465, July 26, 1990]

Subpart P—Operational Fixed Stations

§ 87.445 Scope of service.

An operational fixed station provides control, repeater or relay functions for its associated aeronautical station.

§ 87.447 Supplemental eligibility.

An applicant for an operational fixed station must show that:

(a) The applicant is the licensee of an aeronautical land station in the aeronautical mobile service; and

(b) Common carrier facilities are not available to satisfy the aeronautical station's requirements.

§ 87.449 Frequencies.

The following frequencies in the 72-76 MHz band are assignable to operational fixed stations using vertical polarization, if no harmful interference is caused to TV reception on Channels 4 and 5. These frequencies are shared with the Land Mobile and the Maritime Mobile Services.

OPERATIONAL FREQUENCIES IN THE 72-76 MHz BAND

Carrier frequency in MHz	
72.02	72.80
72.04	72.82
72.06	72.84
72.08	72.86
72.10	72.88
72.12	72.90
72.14	72.92
72.16	72.94
72.18	72.96
72.20	72.98
72.22	75.42
72.24	75.46
72.26	75.50
72.28	75.54
72.30	75.58
72.32	75.62
72.34	75.64
72.36	75.66
72.38	75.68
72.40	75.70
72.42	75.72
72.46	75.74
72.50	75.76
72.54	75.78
72.58	75.80
72.62	75.82
72.64	75.84
72.66	75.86
72.68	75.88
72.70	75.90
72.72	75.92
72.74	75.94
72.76	75.96
72.78	75.98

§ 87.451 Licensing limitations.

Operational fixed stations are subject to the following licensing limitations:

(a) A maximum of four frequencies will be assigned.

(b) Stations will not be authorized when applications indicate less than 16 km (10 miles) separation between a proposed station and a TV transmitter operating on either Channel 4 or 5, or from the post office of a community in which either channel is assigned but not in operation.

(c) Stations located between 16 km (10 miles) and 128 km (80 miles) of a TV transmitter operating on either Channel 4 or 5, or from the post office of a community in which either channel is assigned but not in operation

secondary to TV operations within
Grade B service contour.[1]

Subpart Q—Stations in the Radiodetermination Service

.471 Scope of service.

tations in the aeronautical radiode-
mination service provide radionavi-
ion and radiolocation services.

) Transmission by radionavigation
d stations must be limited to aero-
itical navigation, including obstruc-
n warning.

) Radionavigation land test sta-
s are used for the testing and cali-
tion of aircraft navigational aids
l associated equipment. Transmis-
n must be limited to cases when ra-
tion is necessary and there is no al-
native.

) Transmissions by emergency lo-
or transmitter (ELT) test stations
st be limited to necessary testing of
Ts and to training operations relat-
to the use of such transmitters.

.473 Supplemental eligibility.

a) Licenses for radionavigation land
tions will be granted only to appli-
its who can justify the need for an
onautical radionavigation service
en the Federal Aviation Adminis-
tion is not prepared to render this
vice.

) Licenses for radionavigation land
t stations (MTF) will be granted
y to applicants engaged in the de-
opment, manufacture or mainte-
nce of aircraft radionavigation
ipment. Licenses for radionaviga-
n land test stations (OTF) will be
nted only to applicants who agree
establish the facility at an airport
the use of the public.

(c) Licenses for ELT test stations will be granted only to applicants to train personnel in the operation and location of ELTs, or for testing related to the manufacture or design of ELTs.

§ 87.475 Frequencies.

(a) *Frequency coordination.* The Commission will assign frequencies to radionavigation land stations and radionavigation land test stations after coordination with the FAA. The applicant must notify the appropriate Regional Office of the FAA prior to submission to the Commission of an application for a new station or for modification of an existing station to change frequency, power, location or emission. Each application must be accompanied by a statement showing the name of the FAA Regional Office notified and the date of notification.

(b) *Frequencies available for radionavigation land stations.* (1) LORAN-C is a long range navigation system which operates in the 90–110 kHz band.

(2) Radiobeacon stations enable an aircraft station to determine bearing or direction in relation to the radiobeacon station. Radiobeacons operate in the bands 190–285 kHz; 325–435; and 510–525 kHz.

(3) Aeronautical marker beacon stations radiate a vertical distinctive pattern on 75 MHz which provides position information to aircraft.

(4) The following table lists the specific frequencies in the 108.100–111.950 MHz band which are assignable to localizer stations with simultaneous radiotelephone channels and their associated glide path station frequency from the 328.600–335.400 MHz band.

Localizer (MHz)	Glide path (MHz)
108.100	334.700
108.150	334.550
108.300	334.100
108.350	333.950
108.500	329.900
108.550	329.750
108.700	330.500
108.750	330.350
108.900	329.300
108.950	329.150
109.100	331.400
109.150	331.250
109.300	332.000
109.350	331.850
109.500	332.600

OET Bulletin No. 67, March 1988, enti-
l "Potential Interference from Oper-
nal Fixed Stations in the 72–76 MHz
nd to Television Channels 4 and 5" de-
bes an analytical model that can be used
alculate the potential interference that
ht result from a given fixed station oper-
n. Copies of the bulletin may be ob-
ned from the Commission's current dupli-
ion contractor. Information concerning
current duplication contractor may be
ained from the Office of Public Affairs,
nsumer Assistance and Small Business
ision, Telephone (202) 632–5050.

Localizer (MHz)	Glide path (MHz)
109.550	332.450
109.700	333.200
109.750	333.050
109.900	333.800
109.950	333.650
110.100	334.400
110.150	334.250
110.300	335.000
110.350	334.850
110.500	329.600
110.550	329.450
110.700	330.200
110.750	330.050
110.900	330.800
110.950	330.650
111.100	331.700
111.150	331.550
111.300	332.300
111.350	332.150
111.500	332.900
111.550	332.750
111.700	333.500
111.750	333.350
111.900	331.100
111.950	330.950

(5) VHF omni-range (VOR) stations are to be assigned frequencies in the 112.050-117.950 MHz band (50 kHz channel spacing) and the following frequencies in the 108-112 MHz band:

108.200
108.250
108.400
108.450
108.600
108.650
108.800
108.850
109.000
109.050
109.200
109.250
109.400
109.450
109.600
109.650
109.800
109.850
110.000
110.050

110.200
110.250
110.400
110.450
110.600
110.650
110.800
110.850
111.000
111.050
111.200
111.250
111.400
111.450
111.600
111.650
111.800
111.850
112.000

(6) The band 960-1215 MHz is available for the use of land stations and associated airborne electronic aids to air navigation. When distance measuring equipment (DME) is intended to operate with a single VHF navigation station in the 108-117.975 MHz band, the DME operating channel must be paired with the VHF channel as shown in the following table:

DME CHANNELING AND PAIRING

[MHz]

VHF channel	Airborne interrogating frequency	Ground reply frequency
108.000	1041.000	978.00
108.050	1041.000	1104.00
108.100	1042.000	979.00
108.150	1042.000	1105.00
108.200	1043.000	980.00
108.250	1043.000	1106.00
108.300	1044.000	981.00
108.350	1044.000	1107.00
108.400	1045.000	982.00
108.450	1045.000	1108.00
108.500	1046.000	983.00
108.550	1046.000	1109.00
108.600	1047.000	984.00
108.650	1047.000	1110.00
108.700	1048.000	985.00
108.750	1048.000	1111.00
108.800	1049.000	986.00
108.850	1049.000	1112.00
108.900	1050.000	987.00
108.950	1050.000	1113.00
109.000	1051.000	988.00
109.050	1051.000	1114.00
109.100	1052.000	989.00
109.150	1052.000	1115.00
109.200	1053.000	990.00
109.250	1053.000	1116.00
109.300	1054.000	991.00
109.350	1054.000	1117.00
109.400	1055.000	992.00
109.450	1055.000	1118.00
109.500	1056.000	993.00
109.550	1056.000	1119.00
109.600	1057.000	994.00
109.650	1057.000	1120.00
109.700	1058.000	995.00
109.750	1058.000	1121.00
109.800	1059.000	996.00
109.850	1059.000	1122.00
109.900	1060.000	997.00
109.950	1060.000	1123.00
110.000	1061.000	998.00
110.050	1061.000	1124.00
110.100	1062.000	999.00
110.150	1062.000	1125.00
110.200	1063.000	1000.00
110.250	1063.000	1126.00
110.300	1064.000	1001.00
110.350	1064.000	1127.00
110.400	1065.000	1002.00
110.450	1065.000	1128.00
110.500	1066.000	1003.00
110.550	1066.000	1129.00
110.600	1067.000	1004.00
110.650	1067.000	1130.00
110.700	1068.000	1005.00
110.750	1068.000	1131.00
110.800	1069.000	1006.00
110.850	1069.000	1132.00
110.900	1070.000	1007.00
110.950	1070.000	1133.00
111.000	1071.000	1008.00
111.050	1071.000	1134.00
111.100	1072.000	1009.00
111.150	1072.000	1135.00
111.200	1073.000	1010.00
111.250	1073.000	1136.00
111.300	1074.000	1011.00

E CHANNELING AND PAIRING—Continued

[MHz]

channel	Airborne interrogating frequency	Ground reply frequency
111.350	1074.000	1137.000
111.400	1075.000	1012.000
111.450	1075.000	1138.000
111.500	1076.000	1013.000
111.550	1076.000	1139.000
111.600	1077.000	1014.000
111.650	1077.000	1140.000
111.700	1078.000	1015.000
111.750	1078.000	1141.000
111.800	1079.000	1016.000
111.850	1079.000	1142.000
111.900	1080.000	1017.000
111.950	1080.000	1143.000
112.000	1081.000	1018.000
112.050	1081.000	1144.000
112.100	1082.000	1019.000
112.150	1082.000	1145.000
112.200	1083.000	1020.000
112.250	1083.000	1146.000
112.300	1094.000	1157.000
112.350	1094.000	1031.000
112.400	1095.000	1158.000
112.450	1095.000	1032.000
112.500	1096.000	1159.000
112.550	1096.000	1033.000
112.600	1097.000	1160.000
112.650	1097.000	1034.000
112.700	1098.000	1161.000
112.750	1098.000	1035.000
112.800	1099.000	1162.000
112.850	1099.000	1036.000
112.900	1100.000	1163.000
112.950	1100.000	1037.000
113.000	1101.000	1164.000
113.050	1101.000	1038.000
113.100	1102.000	1165.000
113.150	1102.000	1039.000
113.200	1103.000	1166.000
113.250	1103.000	1040.000
113.300	1104.000	1167.000
113.350	1104.000	1041.000
113.400	1105.000	1168.000
113.450	1105.000	1042.000
113.500	1106.000	1169.000
113.550	1106.000	1043.000
113.600	1107.000	1170.000
113.650	1107.000	1044.000
113.700	1108.000	1171.000
113.750	1108.000	1045.000
113.800	1109.000	1172.000
113.850	1109.000	1046.000
113.900	1110.000	1173.000
113.950	1110.000	1047.000
114.000	1111.000	1174.000
114.050	1111.000	1048.000
114.100	1112.000	1175.000
114.150	1112.000	1049.000
114.200	1113.000	1176.000
114.250	1113.000	1050.000
114.300	1114.000	1177.000
114.350	1114.000	1051.000
114.400	1115.000	1178.000
114.450	1115.000	1052.000
114.500	1116.000	1179.000
114.550	1116.000	1053.000
114.600	1117.000	1180.000
114.650	1117.000	1054.000

DME CHANNELING AND PAIRING—Continued

[MHz]

VHF channel	Airborne interrogating frequency	Ground reply frequency
114.700	1118.000	1181.000
114.750	1118.000	1055.000
114.800	1119.000	1182.000
114.850	1119.000	1056.000
114.900	1120.000	1183.000
114.950	1120.000	1057.000
115.000	1121.000	1184.000
115.050	1121.000	1058.000
115.100	1122.000	1185.000
115.150	1122.000	1059.000
115.200	1123.000	1186.000
115.250	1123.000	1060.000
115.300	1124.000	1187.000
115.350	1124.000	1061.000
115.400	1125.000	1188.000
115.450	1125.000	1062.000
115.500	1126.000	1189.000
115.550	1126.000	1063.000
115.600	1127.000	1190.000
115.650	1127.000	1064.000
115.700	1128.000	1191.000
115.750	1128.000	1065.000
115.800	1129.000	1192.000
115.850	1129.000	1066.000
115.900	1130.000	1193.000
115.950	1130.000	1067.000
116.000	1131.000	1194.000
116.050	1131.000	1068.000
116.100	1132.000	1195.000
116.150	1132.000	1069.000
116.200	1133.000	1196.000
116.250	1133.000	1070.000
116.300	1134.000	1197.000
116.350	1134.000	1071.000
116.400	1135.000	1198.000
116.450	1135.000	1072.000
116.500	1136.000	1199.000
116.550	1136.000	1073.000
116.600	1137.000	1200.000
116.650	1137.000	1074.000
116.700	1138.000	1201.000
116.750	1138.000	1075.000
116.800	1139.000	1202.000
116.850	1139.000	1076.000
116.900	1140.000	1203.000
116.950	1140.000	1077.000
117.000	1141.000	1204.000
117.050	1141.000	1078.000
117.100	1142.000	1205.000
117.150	1142.000	1079.000
117.200	1143.000	1206.000
117.250	1143.000	1080.000
117.300	1144.000	1207.000
117.350	1144.000	1081.000
117.400	1145.000	1208.000
117.450	1145.000	1082.000
117.500	1146.000	1209.000
117.550	1146.000	1083.000
117.600	1147.000	1210.000
117.650	1147.000	1084.000
117.700	1148.000	1211.000
117.750	1148.000	1085.000
117.800	1149.000	1212.000
117.850	1149.000	1086.000
117.900	1150.000	1213.000
117.950	1150.000	1087.000

(7) 1300–1350 MHz: The use of this band is restricted to surveillance radar stations and associated airborne transponders.

(8) 1559–1626.5 MHz: The use of this band is limited to airborne electronic aids to air navigation and any associated land stations.

(c) *Frequencies available for radionavigation land test stations.* (1) The frequencies set forth in § 87.187(c), (e) through (j), (r), and (t) and § 87.475(b) (6) through (10), and (12) may be assigned to radionavigation land test stations for the testing of aircraft transmitting equipment that normally operate on these frequencies and for the testing of land-based receiving equipment that operate with airborne radionavigation equipment.

(2) The frequencies available for assignment to radionavigation land test stations for the testing of airborne receiving equipment are 108.000 and 108.050 MHz for VHF omni-range; 108.100 and 108.150 MHz for localizer; 334.550 and 334.700 MHz for glide slope; 978 and 979 MHz (X channel)/ 1104 MHz (Y channel) for DME; 1030 MHz for ATC radar beacon transponders; and 5031.0 MHz for microwave landing systems. Additionally, the frequencies in paragraph (b) of this section may be assigned to radionavigation land test stations after coordination with the FAA. The following conditions apply:

(i) The maximum power authorized on the frequencies 108.150 and 334.550 MHz is 1 milliwatt. The maximum power authorized on all other frequencies is one watt.

(ii) The pulse repetition rate (PRR) of the 1030 MHz ATC radar beacon test set will be 235 pulses per second (pps) ±5pps.

(iii) The assignment of 108.000 MHz is subject to the condition that no interference will be caused to the reception of FM broadcasting stations and stations using the frequency are not protected against interference from FM broadcasting stations.

(d) *Frequencies available for ELT test stations.* The frequencies available for assignment to ELT test stations are 121.600, 121.650, 121.700, 121.750, 121.800, 121.850, and 121.900 MHz. Licensees must:

(1) Not cause harmful interference to voice communications on these frequencies or any harmonically related frequency.

(2) Coordinate with the appropriate FAA Regional Spectrum Management Office prior to each activation of the transmitter.

[53 FR 28940, Aug. 1, 1988, as amended at 54 FR 11721, Mar. 22, 1989]

§ 87.477 Condition of grant for radionavigation land stations.

Radionavigation land stations may be designated by the FAA as part of the National Airspace System. Stations so designated will be required to serve the public under IFT conditions. This condition of grant is applicable to all radionavigation land stations.

§ 87.479 Harmful interference to radionavigation land stations.

(a) Military or other Government stations have been authorized to establish wide-band systems using frequency-hopping spread spectrum techniques in the 960–1215 MHz band. Authorization for a Joint Tactical Information Distribution Systems (JTIDS has been permitted on the basis of non-interference to the established aeronautical radionavigation service in this band. In order to accommodate the requirements for the system within the band, restrictions are imposed. Transmissions will be automatically prevented if.

(1) The frequency-hopping mode fails to distribute the JTIDS spectrum uniformly across the band;

(2) The radiated pulse varies from the specified width of 6.4 microseconds ±5%;

(3) The energy radiated within ±7 MHz of 1030 and 1090 MHz exceeds a level of 60 dB below the peak of the JTIDS spectrum as measured in a 300 kHz bandwidth. The JTIDS will be prohibited from transmitting if the time slot duty factor exceeds a 20 percent duty factor for any single user and a 40 percent composite duty factor for all JTIDS emitters in a geographic area.

(b) If radionavigation systems operating in the 960–1215 MHz band experience interference or unexplained loss equipment performance, the situa- on must be reported immediately to ie nearest office of the FAA, the Na- onal Telecommunications and Infor- ation Administration, Washington, C 20504, or the nearest Federal Com- unications Commission field office. he following information must be rovided to the extent available:

(1) Name, call sign and category of ation experiencing the interference;

(2) Date and time of occurrence;

(3) Geographical location at time of ccurrence;

(4) Frequency interfered with;

(5) Nature of interference; and

(6) Other particulars.

87.481 Unattended operation of domestic radiobeacon stations.

(a) Radiobeacons may be licensed or unattended operation. An appli- ant for unattended operations must rovide information about the follow- ng:

(1) The transmitter is crystal con- rolled and specifically designed for adiobeacon service and capable of ra smitting by self-actuating means;

(2) The emissions of the transmitter must be continuously monitored by a licensed operator, or by a direct positive automatic monitor, supplemented by aural monitoring at suitable intervals;

(3) If as a result of aural monitoring it is determined that a deviation from the terms of the station license has occurred, the transmitters must be disabled immediately by a properly authorized person. If automatic monitoring is used, the monitor must insure that the operation of the transmitter meets the license terms or is disabled;

(4) The time, including travel time, required for a properly authorized person to disable the transmitter;

(5) The equipment must be inspected at least every 180 days. Results of inspections must be kept in the station maintenance records;

(6) The transmitter is not operable by or accessible to, other than authorized persons;

(7) The transmitter is in a remote location.

(b) Authority for unattended operation must be expressly stated in the station license.

Subpart R—Civil Air Patrol Stations

§ 87.501 Scope of service.

Civil Air Patrol land and mobile stations must be used only for training, operational and emergency activities of the Civil Air Patrol.

(a) Civil Air Patrol land and mobile stations may communicate with other land and, mobile stations of the Civil Air Patrol. A Civil Air Patrol land station may be moved from its authorized location for temporary operation in the same general area for short periods of time not to exceed 72 hours.

(b) When engaged in training or on actual missions in support of the U.S. Air Force, Civil Air Patrol stations may communicate with U.S. Air Force stations on the frequencies specified in subpart E.

§ 87.503 Supplemental eligibility.

Licenses for Civil Air Patrol land and mobile stations will be issued only to Wings or the Headquarters of the Civil Air Patrol. All applications must be submitted to the Commission via Civil Air Patrol Headquarters, Maxwell Air Force Base, AL 36112. A single fleet license will be issued to Civil Air Patrol Headquarters and to each Civil Air Patrol Wing to authorize all Civil Air Patrol Station transmitters operated by the Wing or Headquarters.

[54 FR 11721, Mar. 22, 1989]

§ 87.505 Frequencies.

The assigned frequencies available for assignment to Civil Air Patrol land and mobile stations are contained in the frequency table in subpart E. The frequency, emission, and maximum power will be determined by Headquarters Civil Air Patrol in accordance with the Civil Air Patrol Communications Plan.

Subpart S—Automatic Weather Observation Stations

§ 87.525 Scope of service.

Automatic weather observation stations must provide up-to-date weather information including the time of the latest weather sequence, altimeter setting, wind speed and direction, dewpoint, temperature, visibility and other pertinent data needed at airports having neither a full-time control tower nor a full-time FAA Flight Service Station. When a licensee has entered into an agreement with the FAA, an automatic weather observation station may also operate as an automatic terminal information station during the control tower's operating hours.

§ 87.527 Supplemental eligibility.

(a) Licenses will be granted only upon FAA approval.

(b) Eligibility for an automatic weather observation station or an automatic terminal information station is limited to the owner or operator of an airport or to a person who has entered into a written agreement with the owner or operator for exclusive rights to operate and maintain the station. Where applicable a copy of the agreement between the applicant and owner or operator of the airport must be submitted with an application.

(c) Only one automatic weather observation station or an automatic terminal information station will be licensed at an airport.

§ 87.529 Frequencies.

Prior to submitting an application, each applicant must notify the nearest appropriate FAA Regional Spectrum Management Office. Each application must be accompanied by a statement showing the name of the FAA Regional Office and date notified. The Commission will assign the frequency. Normally frequencies available for air traffic control operations set forth in subpart E will be assigned to automatic weather observation stations and to automatic terminal information stations. When a licensee has entered into an agreement with the FAA to operate the same station as both an automatic weather observation station and as an automatic terminal information station, the same frequency will be used in both modes of operation.

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AUTHORITY: Secs. 4, 303, 331, 48 Stat., as amended, 1066, 1082; 47 U.S.C. 154, 303, and 332, unless otherwise noted.

SOURCE: 43 FR 54791, Nov. 22, 1978, unless otherwise noted.

Subpart A—General Information

§ 90.1 Basis and purpose.

(a) *Basis.* The rules in this part are promulgated under Title III of the Communications Act of 1934, as amended which vests authority in the Federal Communications Commission to regulate radio transmission and to issue licenses for radio stations. All rules in this part are in accordance with applicable treaties and agreements to which the United States is a party.

(b) *Purpose.* This part states the conditions under which radio communications systems may be licensed and used in the Public Safety, Special Emergency, Industrial, Land Transportation, and Radiolocation Radio Services. These rules do not govern radio systems employed by agencies of the Federal Government.

§ 90.5 Other applicable rule parts.

Other Commission rule parts of importance that may be referred to with respect to licensing and operations in radio services governed under this part include the following:

(a) Part 0 of the Commission's Rules describes the Commission's organization and delegations of authority. This part also lists available Commission publications, and standards and procedures for access to Commission records, and location of Commission Field Offices.

(b) Part 1 of this chapter includes rules of practice and procedure for adjudicatory proceedings including hearing proceedings, rule making proceedings; procedures for reconsideration and review of the Commission actions; provisions concerning violation notices and forfeiture proceedings; and the environmental processing requirements that, if applicable, must be complied with prior to the initiation of construction.

(c) Part 2 contains the table of frequency allocations and special requirements in International regulations, agreements, and treaties. This part also contains standards and procedures concerning marketing of radio frequency devices, and for obtaining equipment type acceptance and type approval.

(d) Part 5 contains standards and procedures for obtaining experimental authorizations.

(e) Part 15 provides for the operation of incidental and restricted radio frequency devices that do not require an individual license.

(f) Part 17 contains detailed requirements for construction, marking, and lighting of antenna towers.

(g) Part 18 deals with the operation of industrial, scientific, and medical (ISM) devices that are not intended for radio communication.

(h) Part 22 contains regulations for public (common carrier) mobile radio services.

(i) Part 68 contains technical standards for connection of private land mobile radio equipment to the public switched telephone network.

(j) Part 94 governs licensing and operation of private operational-fixed radio stations on frequencies in the microwave spectrum above 928 MHz.

[43 FR 54791, Nov. 22, 1978, as amended at 50 FR 39677, Sept. 30, 1985; 50 FR 40976, Oct. 8, 1985; 55 FR 20398, May 16, 1990]

§ 90.7 Definitions.

Antenna height above average terrain (AAT). Height of the center of the radiating element of the antenna above the average terrain. (See § 90.309(a)(4) for calculation method.)

Antenna height above sea level. The height of the topmost point of the antenna above mean sea level.

Antenna structure. Structure on which an antenna is mounted.

Assigned frequency. Center of a frequency band assigned to a station.

Assigned frequency band. The frequency band the center of which coincides with the frequency assigned to the station and the width of which equals the necessary bandwidth plus twice the absolute value of the frequency tolerance.

Authorized bandwidth. The frequency band, specified in kilohertz and centered on the carrier frequency containing those frequencies upon which a total of 99 percent of the radiated power appears, extended to include any discrete frequency upon which the power is at least 0.25 percent of the total radiated power.

Automatic Vehicle Monitoring (AVM). The use of non-voice signalling methods from and to vehicles to make known at fixed points the location of the vehicles. AVM systems may al transmit status and instructional messages related to the vehicles involved.

Average terrain. The average elevation of terrain between 2 and 10 miles from the antenna site.

Base station. A station at a specified site authorized to communicate with mobile stations.

Carrier frequency. The frequency of an unmodulated electromagnetic wave.

Channel loading. The number of mobile transmitters authorized to operate on a particular channel within the same service area.

Control point. Any place from which a transmitter's functions may be controlled.

Control station. An Operational Fixed Station, the transmissions of which are used to control automatically the emissions or operation of another radio station at a specified location.

Conventional radio system. A method of operation in which one or more radio frequency channels are assigned to mobile and base stations but are not employed as a trunked group. An "urban-conventional system" is one whose transmitter site is located within 15 miles (24 km) of the geographic center of any of the first 50 urbanized areas (ranked by population) of the United States. A "suburban-conventional system" is one whose transmitter site is located more than 15 miles (24 km) from the geographic center of the first 50 urbanized areas. See Table 21, Rank of Urbanized Areas in the United States by Population, page 1-87, U.S. Census (1970); and Table 1 of paragraph (h) of § 90.635.

Developmental operation. A specially licensed operation for the purpose of testing concepts in the use of radio appropriate to the radio services governed by this part.

Dispatch point. Any place from which radio messages can be originated under the supervision of a control point.

Effective radiated power (ERP). The power supplied to an antenna multiplied by the relative gain of the antenna in a given direction.

Fixed relay station. A station at a specified site used to communicate

ith another station at another speci-
ed site.
Frequency coordinator. An entity or
ganization that has been certified by
e Commission to recommend fre-
uencies for use by licensees in the
rivate Land Mobile Radio Services.
Geographic center. The geographic
enter of an urbanized area is defined
y the coordinates given at Table 1 of
90.635.
Harmful interference. For the pur-
oses of resolving conflicts between
ations operating under this part, any
mission, radiation, or induction which
pecifically degrades, obstructs, or
nterrupts the service provided by
uch stations.
Interconnection. Connection
hrough automatic or manual means
f private land mobile radio stations
ith the facilities of the public
witched telephone network to permit
he transmission of messages or sig-
als between points in the wireline or
adio network of a public telephone
ompany and persons served by pri-
ate land mobile radio stations. Wire-
ne or radio circuits or links furnished
y common carriers, which are used by
icensees or other authorized persons
or transmitter control (including dial-
p transmitter control circuits) or as
n integral part of an authorized, pri-
ate, internal system of communica-
ion or as an integral part of dispatch
oint circuits in a private land mobile
adio station are not considered to be
nterconnection for purposes of this
ule part.
Internal System. An internal system
f communication is one in which all
essages are transmitted between the
ixed operating positions located on
remises controlled by the licensee
nd the associated mobile stations or
aging receivers of the licensee. (See
Subpart O).
Itinerant Operation. Operation of a
adio station at unspecified locations
or varying periods of time.
Land mobile radio service. A mobile
service between base stations and land
mobile stations, or between land
mobile stations.
Land Mobile Radio System. A regu-
larly interacting group of base, mobile
and associated control and fixed relay
stations intended to provide land mobile radio communications service over a single area of operation.

Land Station. A station in the mobile service not intended to be used while in motion. [As used in this part, the term may be used to describe a base, control, fixed, operational fixed or fixed relay station, or any such station authorized to operate in the "temporary" mode.]

Line A. An imaginary line within the U.S., approximately paralleling the U.S.-Canadian border, north of which Commission coordination with Canadian authorities in the assignment of frequencies is generally required. It begins at Aberdeen, Washington, running by great circle arc to the intersection of 48° N., 120° W., then along parallel 48° N., to the intersection of 95° W., thence by great circle arc through the southern most point of Duluth, Minn., thence by great circle arc to 45° N., 85° W., thence souuthward along meridian 85° W., to its intersection with parallel 41° N., thence along parallel 41° N. to its intersection with meridian . . . 82° W., thence by great circle arc through the southernmost point of Bangor, Maine, thence by great circle arc through the southernmost point of Searsport, Maine, at which point it terminates.

Line C. An imaginary line in Alaska approximately paralleling the border with Canada, East of which Commission coordination with Canadian authorities in the assignment of frequencies is generally required. It begins at the intersection of 70° N., 144° W., thence by great circle arc to the intersection of 60° N., 143° W., thence by great circle arc so as to include all the Alaskan Panhandle.

Meteor burst communications. Communications by the propagation of radio signals reflected off ionized meteor trails.

Mobile relay station. A base station in the mobile service authorized to retransmit automatically on a mobile service frequency communications which originate on the transmitting frequency of the mobile station.

Mobile Repeater Station. A mobile station authorized to retransmit automatically on a mobile service frequency, communications to or from hand-carried transmitters.

Mobile service. A service of radiocommunication between mobile and base stations, or between mobile stations.

Mobile station. A station in the mobile service intended to be used while in motion or during halts at unspecified points. This includes hand carried transmitters.

Operational Fixed Station. A fixed station, not open to public correspondence, operated by, and for the sole use of those agencies operating their own radiocommunication facilities in the Public Safety, Industrial, Land Transportation, Marine, or Aviation Radio Services. (This includes all stations in the fixed service under this part.)

Output Power. The radio frequency output power of a transmitter's final radio frequency stage as measured at the output terminal while connected to a load of the impedance recommended by the manufacturer.

Paging. A one-way communications service from a base station to mobile or fixed receivers that provide signaling or information transfer by such means as tone, tone-voice, tactile, optical readout, etc.

Person. An individual, partnership, association, joint stock company, trust or corporation.

Private carrier. An entity licensed in the private services and authorized to provide communications service to other private services on a commercial basis.

Radio call box. A transmitter used by the public to request fire, police, medical, road service, or other emergency assistance.

Radiodetermination. The determination of position, or the obtaining of information relating to position, by means of the propagation of radio waves.

Radiofacsimile. A system of radiocommunication for the transmission of fixed images, with or without halftones, with a view to their reproduction in a permanent form.

Radiolocation. Radiodetermination used for purposes other than those of radionavigation.

Radionavigation. Radiodetermination used for the purposes of navigation, including obstruction warning.

Radio teleprinting. Radio trans
sions to a printing telegraphic ins
ment having a signal-actuated mech
nism for automatically printing
ceived messages.

Secondary operation. Radio comm
nications which may not cause inte
ference to operations authorized o
primary basis and which are not p
tected from interference from th
primary operations.

Signal booster. A device which au
matically amplifies and transmits
ceived base station transmissions w
no change in frequency or authori
bandwidth.

Specialized Mobile Radio System
radio system in which licensees p
vide land mobile communications se
ices (other than radiolocation servic
in the 800 MHz and 900 MHz bands
a commercial basis to entities eligi
to be licensed under this Part, Fede
Government entities, and individual

SMSA (Standard Metropolitan S
tistical Area). A city of 50,000 or mo
population and the surrounding cou
ties.

Station authorization. A licen
issued by the Commission for the
eration of a radio station.

Telecommand. The transmission
non voice signals for the purpose of
motely controlling a device.

Telemetering (also telemetry). T
transmission of non-voice signals
the purpose of automatically indic
ing or recording measurements a
distance from the measuring inst
ment.

Travelers' Information Station.
base station in the Local Governme
Radio Service used to transmit no
commercial, voice information perta
ing to traffic and road conditions, tr
fic hazard and traveler advisories,
rections, availability of lodging, r
stops, and service stations, and
scriptions of local points of interest.

Trunk (telephony). A one or two-w
channel provided as a common traf
artery between switching equipment.

Trunk group. All of the trunks o
given type of characteristic th
extend between two switching points

Trunked radio system. A method
operation in which a number of ra
frequency channel pairs are assign

to mobile and base stations in the system for use as a trunk group.

Urbanized Area. A city and the surrounding closely settled territories.

[43 FR 54791, Nov. 22, 1978]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 90.7, see the List of CFR Sections Affected in the Finding Aids section of this volume.

Subpart B—Public Safety Radio Services

§ 90.15 Scope.

The Public Safety Radio Services include the Local Government, Police, Fire, Highway Maintenance and Forestry-Conservation Radio Services. Rules as to eligibility for licensing, frequencies available, and any special requirements as to each of these radio services are set forth in the following sections.

§ 90.16 Public Safety National Plan.

The Commission has established a National Plan which specifies special policies and procedures governing the Public Safety Radio Services and the Special Emergency Radio Service. The National Plan is contained in the *Report and Order* in General Docket No. 87-112. The principal spectrum resource for the National Plan is the 821-824 MHz and the 866-869 MHz bands. The National plan establishes planning regions covering all parts of the United States, Puerto Rico, and the U.S. Virgin Islands. No assignments will be made in the 821-824 MHz and 866-869 MHz bands until a regional plan for the area has been accepted by the Commission.

[53 FR 1023, Jan. 15, 1988]

§ 90.17 Local Government Radio Service.

(a) *Eligibility.* Any territory, possession, state, city, county, town or similar governmental entity, including a district and an authority, but not including a school district or authority or a park district or authority except as provided for in § 90.242, is eligible to hold authorizations in the Local Government Radio Service to operate radio stations for transmission of communications essential to official activities of the licensee.

(b) *Frequencies available.* The following table indicates frequencies available for assignment to stations in the Local Government Radio Service, together with the class of station(s) to which they are normally assigned and the specific assignment limitations which are explained in paragraph (c) of this section.

Local Government Radio Service Frequency Table

Frequency or band	Class of station(s)	Limitations
Kilohertz:		
530	Base (T.I.S.)	23
1610	do	23
2726	Base or mobile	1
2000 to 10,000	Base or mobile	25
Megahertz:		
37.10	do	2
37.18	do	2
37.26	do	2
39.06	Mobile	2, 3
39.10	Base or mobile	2
39.18	do	2
39.50	do	2
39.58	do	2
39.82	do	2
39.90	do	2
39.98	do	2
45.08	do	
45.12	do	
45.16	do	
45.20	do	
45.24	do	
45.28	do	
45.32	do	
45.36	do	
45.40	do	
45.44	do	
45.48	do	
45.52	do	
45.56	do	
45.60	do	
45.64	do	
46.52	do	
46.54	do	
46.56	do	
46.58	do	
72.00 to 76.00	Operational fixed	6
150-170	Base or mobile	24
153.740	Mobile	
153.755	do	
153.785	do	
153.800	do	
153.815	do	
153.845	do	
153.860	do	
153.875	do	
153.905	do	
153.920	do	
153.935	do	
153.965	do	
153.980	do	
153.995	do	
154.025	Base or mobile	
154.040	do	5
154.055	do	5
154.085	do	5

Local Government Radio Service Frequency Table—Continued

Frequency or band	Class of station(s)	Limitations
154.100	do	5
154.115	do	5
154.45625	Fixed or mobile	9, 20, 21, 22
154.46375	do	7, 19, 20, 21, 22
154.47125	do	7, 20, 21, 22
154.47875	do	9, 20, 21, 22
154.965	Base or mobile	
154.980	do	
154.995	do	
155.025	do	
155.040	do	
155.055	do	
155.085	do	
155.100	do	
155.115	do	
155.145	do	
155.715	do	
155.745	do	
155.760	do	
155.775	do	
155.805	do	
155.820	do	
155.835	do	
155.865	do	
155.880	do	
155.895	do	
155.925	do	
155.940	do	
155.955	do	
155.985	Mobile	
156.000	do	
156.015	do	
158.745	Base and mobile	
158.760	do	
158.775	do	
158.805	do	
158.820	do	
158.835	do	
158.865	Mobile	
158.880	do	
158.895	do	
158.925	do	
158.940	do	
158.955	do	
169–172	do	27
173.20375	Fixed or mobile	7, 20, 21, 22
173.2100	do	7, 8, 21, 22
173.2375	do	9, 20, 21, 22
173.2625	do	9, 20, 21, 22
173.2875	do	9, 20, 21, 22
173.3125	do	9, 20, 21, 22
173.3375	do	9, 20, 21, 22
173.3625	do	9, 20, 21, 22
173.3900	do	7, 8, 21, 22
173.39625	do	7, 20, 21, 22
450 to 470	Fixed	10
453.025	Central control, fixed	11
453.050	Base or mobile	12
453.075	Central control, fixed	11
453.100	Base or mobile	12
453.125	Central control, fixed	11
453.150	Base or mobile	12
453.175	Central control, fixed	11
453.200	Base or mobile	12
453.225	do	
453.250	do	12
453.275	do	
453.300	do	12

Local Government Radio Service Frequenc Table—Continued

Frequency or band	Class of station(s)	Limitatio
453.325	do	
453.350	do	
453.375	do	
453.400	do	
453.425	do	
453.450	do	
453.475	do	
453.500	do	
453.525	do	
453.550	do	
453.575	do	
453.600	Base or mobile	
453.625	do	
453.650	do	
453.675	do	
453.700	do	
453.725	do	
453.750	do	
453.775	do	
453.800	do	
453.825	do	
453.850	do	
453.875	do	
453.900	do	
453.925	do	
453.950	do	
453.975	do	
458.025	Radio call boxes, fixed.	11,
458.050	Mobile	
458.075	Radio call boxes, fixed.	11,
458.100	Mobile	
458.125	Radio call boxes, fixed.	11,
458.150	Mobile	
458.175	Radio call boxes, fixed.	
458.200	Mobile	
458.225	do	
458.250	do	
458.275	do	
458.300	do	
458.325	do	
458.350	do	
458.375	do	
458.400	do	
458.425	do	
458.450	do	
458.475	do	
458.500	do	
458.525	do	
458.550	do	
458.575	do	
458.600	do	
458.625	do	
458.650	do	
458.675	do	
458.700	do	
458.725	do	
458.750	do	
458.775	do	
458.800	do	
458.825	do	
458.850	do	
458.875	do	
458.900	do	
458.925	do	
458.950	do	

al Government Radio Service Frequency Table—Continued

ency or band	Class of station(s)	Limitations
975	......do	
to 512	Base or mobile	14
to 824	Mobile	15
to 869	Base or mobile	15
and above	Operational-fixed	16
to 930	Base only	26
7 to 1435	Operational-fixed, base or mobile.	17
0 to 2500	Base or mobile	18
650 to 10,680*	......do	

he frequencies in the band 10.55–10.68 GHz are avail- for Digital Termination Systems and for associated odal links in the Point-to-Point Microwave Radio Serv- lo new licenses will be issued under this subpart but nt licenses will be renewed.

e) Explanation of assignment limi- ions appearing in the frequency le of paragraph (b) of this section:

1) This frequency is shared with the ecial Emergency Radio Services and vailable for assignment to the offi- l state guard or comparable organi- ion of a State, territory, possession, the District of Columbia which is own to be duly created by law and oject to the control of the highest icial of the governmental entity in- ved, and may be used for emergen- communications and for essential mmunications related to training d maintenance of an efficient orga- zation. In addition to base and obile stations, this frequency may be signed to fixed stations on a second- y basis to base or mobile stations. pon a showing of need, the use of a cond frequency in the band 2505- 00 kHz may be made available to ese organizations through appropri- e arrangements with Government encies for restricted area use on a ared basis with maximum power itput, emission, and hours of oper- ion determined on the basis of the chnical conditions involved in using ne selected frequency in the particu- r area.

(2) This frequency is shared with the olice Radio Service.

(3) The maximum output power of ny transmitter authorized to operate n this frequency shall not exceed 2 vatts.

(4) [Reserved]

(5) This frequency is not available for assignment in this service in Puerto Rico or the Virgin Islands.

(6) Assignment and use of frequencies in the band 72–76 MHz are governed by § 90.257 for operational-fixed stations and by § 90.241 for emergency call box operations. Specific frequencies are listed at § 90.257(a)(1).

(7) The maximum power output of the transmitter may not exceed 50 watts for fixed stations and 1 watt for mobile stations. A1A, A1D, A2B, A2D, F1B, F1D, F2D, G1B, G1D, G2B, or G2D emission may be authorized.

(8) For FM transmitters, the sum of the highest modulating frequency in hertz and the amount of the frequency deviation or swing in hertz may not exceed 1700 Hz and the maximum deviation may not exceed 1.2 kHz. For AM transmitters, the highest modulating frequency may not exceed 1200 Hz. The carrier frequency must be maintained within .0005 percent of the center of the frequency band, and the authorized bandwidth may not exceed 3 kHz.

(9) The maximum effective radiated power (ERP) may not exceed 20 watts for fixed stations and 2 watts for mobile stations. The height of the antenna system may not exceed 15.24 meters (50 ft.) above ground. All such operation is on a secondary basis to adjacent channel land mobile operations.

(10) The frequencies available for fixed station in this band, and the requirements for assignment are set forth in § 90.261. Operation on these frequencies is secondary to stations in the Industrial and Land Transportation Radio Services where they are assigned for land mobile operations.

(11) This frequency is available for systems first licensed prior to March 31, 1980, for radio call box communications related to safety on highways in accordance with the provisions of § 90.241(c). No new systems will be authorized of this nature after March 31, 1980, but prior authorized systems may be modified, expanded, and renewed. Also, effective March 31, 1980, this frequency is shared for medical paging systems as authorized in accordance with § 90.53 in the Special Emergency Radio Service.

(12) This frequency is available in this service on a shared basis with all other Public-Safety Radio Services.

(13) Available for medical services mobile operations in the Special Emergency Radio Service in accordance with § 90.53(b)(13).

(14) Subpart L contains rules for assignment of frequencies in the 470-512 MHz band.

(15) Subpart S contains rules for assignment of frequencies in the 806-824 MHz and 851-869 MHz bands.

(16) Assignment of frequencies above 928 MHz for operational-fixed stations is governed by part 94 of this Chapter.

(17) This frequency band is available to stations in this service subject to the provisions of § 90.259.

(18) Available only on a shared basis with stations in other services, and subject to no protection from interference due to the operation of industrial, scientific, or medical (ISM) devices. In the 2483.5-2500 MHz band, no applications for new stations or modification to existing stations to increase the number of transmitters will be accepted. Existing licensees as of July 25, 1985, or on a subsequent date following as a result of submitting an application for license on or before July 25, 1985, are grandfathered and their operation is co-primary with the Radiodetermination Satellite Service.

(19) Use of this frequency is limited to stations located at least 120.7 km (75 miles) from the center of any urbanized area of 200,000 or more population (U.S. Census of Population 1970). Operation is on a secondary basis to that of the Power Radio Service.

(20) For FM transmitters, the sum of the highest modulating frequency in Hertz and the amount of the frequency deviation or swing in Hertz may not exceed 2800 Hz and the maximum deviation may not exceed 2.5 kHz. For AM transmitters, the highest modulation frequency may not exceed 2000 Hz. The carrier frequency must be maintained within .0005 percent of the center of the frequency band, and the authorized bandwidth may not exceed 6 kHz.

(21) This frequency is available on a shared basis with the Power, Petroleum, Forest Products, Special Indu al, Business, and Manufacturers R Services for remote control and te etry operations.

(22) Operational fixed stations employ directional antennas havin front to-back ratio of at least 20 Omnidirectional antennas ha unity gain may be employed for tions communicating with at l three receiving locations separated 160° of azimuth.

(23) This frequency is available use by Travelers' Information Stati in accordance with § 90.242.

(24) Rules concerning the use of t band for narrowband operations set forth in § 90.271.

(25) Only the central governme of the fifty individual States, the D trict of Columbia, and the insu areas of the Commonwealth of Northern Mariana Islands, the Co monwealth of Puerto Rico, and unincorporated territories of Ame can Samoa, Guam and the Uni States Virgin Islands are eligible to licensed to use this spectrum, then only for disaster communicatio purposes. Licensees may not use th spectrum to provide operational co munications circuits. See also, § 90.2

(26) Frequencies in this band available only for one-way paging o erations in accordance with § 90.494

(27) Frequencies in this band will assigned for low power wireless mic phones in accordance with the pro sions of § 90.265.

(d) *Additional frequencies availa* In addition to the frequencies show in the frequency table of this secti the following frequencies are availab in this service. (See also § 90.253.)

(1) Substitution of frequencies ava able below 25 MHz may be made in a cordance with the provisions § 90.263.

(2) [Reserved]

(3) Frequencies in the band 73.0-74 MHz may be assigned to stations a thorized their use on or before Dece ber 1, 1961, but no new stations will b authorized in this band, nor will e pansion of existing systems be permi ted. See also § 90.257.

(4) The frequency bands 31.99 32.00 MHz, 33.00 to 33.01 MHz, 33.9 to 34.00 MHz, 37.93 to 38.00 MH

00 to 39.01 MHz, 39.99 to 40.00 MHz d 42.00 to 42.01 MHz, are available assignment for developmental opation subject to the provisions of bpart Q.

5) Frequencies in the 421-430 MHz nd are available in the Detroit, eveland, and Buffalo areas in acrdance with the rules in §§ 90.273 rough 90.281.

e) *Limitation on number of frequens assignable.* Normally only two freencies or pairs of frequencies in the ired frequency mode of operation ll be assigned for mobile service opations by a single applicant in a en area. The assignment of an addinal frequency or pair of frequencies ll be made only upon a satisfactory owing of need, except that:

1) Additional frequencies above 25 Hz may be assigned in connection th the operation of mobile repeaters accordance with § 90.247 notwithanding this limitation.

2) The frequency 39.06 MHz may be signed notwithstanding this limitan.

3) Frequencies in the 25-50 MHz, 0-170 MHz, and 450-512 MHz bands, d the frequency bands 903-904 MHz, 4-912 MHz, 918-926 MHz, and 926-7 MHz may be assigned for the operion of Automatic Vehicle Monitoring VM) systems in accordance with 0.239, notwithstanding this limitan.

4) A licensee of a radio station in is service may operate radio units r the purpose of determining disnce, direction, speed, or position by eans of a radiolocation device on any equency available for radiolocation rposes without specific authorizan from the Commission, provided pe accepted equipment or equipment thorized pursuant to § 90.203(b) (4) d (5) is used and all other rule reirements are satisfied.

ecs. 4, 303, 307, 48 Stat., as amended, 1066, 82, 1083; 47 U.S.C. 154, 303, 307; secs. 4(i) d 303(r), Communications Act of 1934, as nended, §§ 0.131 and 0.331 of the Commison's Rules and 5 U.S.C. 553 (b)(3)(B) and)(3))

3 FR 54791, Nov. 22, 1978]

EDITORIAL NOTE: For FEDERAL REGISTER citions affecting § 90.17, see the List of CFR Sections Affected in the Finding Aids section of this volume.

§ 90.19 Police Radio Service.

(a) *Eligibility.* Any territory, possession, State, county, city, town, and similar governmental entity including a governmental institution authorized by law to provide its own police protection, is eligible to hold authorizations in the Police Radio Service to operate radio stations for transmission of communications essential to official police activities of the licensee.

(b) [Reserved]

(c) *International police radiocommunication.* Police radio licensees which are located in close proximity to the borders of the United States may be authorized to communicate internationally. Request for such authority shall be written and signed and submitted in duplicate. The request shall include information as to the station with which communication will be conducted, and the frequency, power, emission, etc., that will be used. If authorized, such international communication must be conducted in accordance with Article 5 of the Inter-American Radio Agreement, Washington, DC, 1949 which reads as follows:

> Article 5. *Police radio stations.* When the American countries authorize their police radio stations to exchange emergency information by radio with similar stations of another country, the following rules shall be applied.
>
> (a) Only police radio stations located close to the boundaries of contiguous countries shall be allowed to exchange this information.
>
> (b) In general, only important police messages shall be handled, such as those which would lose their value, because of slowness and time limitations if sent on other communication systems.
>
> (c) Frequencies used for radiotelephone communications with mobile police units shall not be used for radiotelegraph communications.
>
> (d) Radiotelephone communications shall be conducted only on frequencies assigned for radiotelephony.
>
> (e) Radiotelegraph communications shall be conducted on the following frequencies: 2804 kHz calling, 2808 kHz working, 2812 kHz working, 5195 kHz day calling, 5185 kHz day working, 5140 kHz day working.
>
> (f) The characteristics of police radio stations authorized to exchange information

shall be notified to the International Telecommunication Union, Geneva, Switzerland.

(g) The abbreviations contained in Appendix 9 of the Atlantic City Radio Regulations shall be used to the greatest possible extent. Service indications are as follows: "P", priority, for messages that are to be sent immediately, regardless of the number of other messages on file. If no service indication is given, the messages are to be transmitted in the order of receipt.

(h) The message shall contain the preamble, address, text and signature, as follows:

Preamble. The preamble of the message shall consist of the following: the serial number preceded by the letters "NR", service indications, as appropriate; the group count according to standard cable count system; the letters "CK", followed by numerals indicating the number of words contained in the text of the message: office and country of origin (not abbreviations): day, month, and hour of filing;

Address. The address must be as complete as possible and shall include the name of the addressee with any supplementary particulars necessary for immediate delivery of the message;

Text. The text may be either in plain language or code;

Signature. The signature shall include the name and title of the person originating the message.

(d) *Frequencies available.* The following table indicates frequencies available for assignment to stations in the Police Radio Service, together with the class of station(s) to which they are normally assigned and the specific assignment limitations which are explained in paragraph (e) of this section:

Police Radio Service Frequency Table

Frequency or band	Class of station(s)	Limitations
Kilohertz:		
851 to 866	Base or mobile	22
928 and above	Operational-fixed	23
929 to 930	Base only	27
1427 to 1435	Operational-fixed, base or mobile.	24
1722	Base or mobile	2, 3
1730	do	2, 3
2366	do	1, 2
2382	do	2
2390	do	1, 2
2406	do	2
2430	do	2
2442	do	2
2450	do	2
2458	do	2
2482	do	2
2490	do	2, 3

Police Radio Service Frequency Table—
Continued

Frequency or band	Class of station(s)
Megahertz:	
37.02	Mobile
37.04	Base or mobile
37.06	do
37.08	do
37.10	do
37.12	do
37.14	do
37.16	do
37.18	do
37.20	do
37.22	do
37.24	do
37.26	do
37.28	do
37.30	do
37.32	do
37.34	Mobile
37.36	Base or mobile
37.38	Mobile
37.40	Base or mobile
37.42	Mobile
39.02	Base or mobile
39.04	do
39.06	do
39.08	do
39.10	do
39.12	do
39.14	do
39.16	do
39.18	do
39.20	do
39.22	do
39.24	do
39.26	Mobile
39.28	Base or mobile
39.30	Mobile
39.32	Base or mobile
39.34	Mobile
39.36	Base or mobile
39.38	Mobile
39.40	Base or mobile
39.42	do
39.44	do
39.46	do
39.48	do
39.50	do
39.52	do
39.54	do
39.56	do
39.58	do
39.60	do
39.62	do
39.64	do
39.66	Mobile
39.68	Base or mobile
39.70	Mobile
39.72	Base or mobile
39.74	Mobile
39.76	Base or mobile
39.78	Mobile
39.80	Base or mobile
39.82	do
39.84	do
39.86	do
39.88	do
39.90	do
39.92	do
39.94	do

Police Radio Service Frequency Table—Continued

equency or band	Class of station(s)	Limitations
.96	do	
.98	do	9
2.02	do	2, 3, 12
2.04	do	2, 3, 12
2.06	do	2, 3, 12
2.08	do	2, 3, 12
2.10	do	2, 3, 12
2.12	do	2, 3, 12
2.14	do	2, 3, 12
2.16	do	2, 3, 12
2.18	Mobile	2, 12
2.20	do	2, 12
2.22	do	2, 12
2.24	do	2, 12
2.26	do	2, 12
2.28	do	2, 12
2.30	do	2, 12
2.32	Base or mobile	2, 3, 12
2.34	do	2, 3, 12
2.36	do	2, 3, 12
2.38	do	2, 3, 12
2.40	do	2, 3, 12, 28
2.42	do	2, 3, 12
2.44	do	2, 3, 12
2.46	do	2, 3, 12
2.48	do	2, 3, 12
2.50	do	2, 3, 12
2.52	do	2, 3, 12
2.54	do	2, 3, 12
2.56	do	2, 3, 12
2.58	do	2, 3, 12
2.60	do	2, 3, 12
2.62	do	2, 3, 12
2.64	do	2, 3, 12
2.66	Mobile	2, 12
2.68	do	2, 12
2.70	do	2, 12
2.72	do	2, 12
2.74	do	2, 12
2.76	do	2, 12
2.78	do	2, 12
2.80	Base or mobile	2, 3, 12
2.82	do	2, 3, 12
2.84	do	2, 3, 12
2.86	do	2, 3, 12
2.88	do	2, 3, 12
2.90	do	2, 3, 12
2.92	do	2, 3, 12
2.94	do	2, 3, 12
4.52	do	2, 3, 12
4.66	do	2, 3, 12
4.70	do	2, 3, 12
4.74	do	2, 3, 12
4.78	Mobile	2, 12
4.82	do	2, 12
4.86	do	2, 12
4.90	do	2, 12
4.94	Base or mobile	2, 3, 12
4.98	do	2, 3, 12
45.02	do	2, 3, 12
45.06	do	2, 3, 12
45.10	do	
45.14	do	
45.18	do	
45.22	do	
45.26	Mobile	
45.30	do	
45.34	do	
45.38	do	
45.42	Base or mobile	
45.46	do	
45.50	do	
45.54	do	
45.58	do	
45.62	do	
45.66	do	
45.70	do	
45.74	Mobile	
45.78	do	
45.82	do	
45.86	Base or mobile	11
45.90	do	29
45.94	do	
45.98	do	
46.02	do	
72.00 to 76.00	Operational fixed	13
150–170	Base or mobile	26
154.650	Mobile	
154.665	Base or mobile	12
154.680	do	12
154.695	do	12
154.710	Mobile	
154.725	Base or mobile	
154.740	do	
154.755	do	
154.770	Mobile	
154.785	Base or mobile	
154.800	do	
154.815	do	
154.830	Mobile	
154.845	Base or mobile	
154.860	do	
154.875	do	
154.890	Mobile	
154.905	Base of mobile	12
154.920	do	12
154.935	do	12
154.950	Mobile	
155.01	Base or mobile	
155.07	do	
155.13	do	
155.19	do	
155.25	do	
155.31	do	
155.370	do	
155.415	do	
155.430	do	
155.445	do	12
155.460	do	12
155.475	do	14
155.490	do	
155.505	do	12
155.520	do	
155.535	do	
155.550	do	
155.565	do	
155.580	do	
155.595	do	
155.610	do	
155.625	do	
155.640	do	
155.655	do	
155.670	do	
155.685	do	
155.700	do	
155.730	do	
155.79	do	
155.85	Mobile	

Police Radio Service Frequency Table—Continued

Frequency or band	Class of station(s)	Limitations
155.91	do	
155.97	do	
156.03	do	
156.09	do	
156.15	do	
156.210	Base or mobile	
158.730	do	
158.790	do	
158.850	do	
158.910	Mobile	
158.970	do	
159.030	do	
159.090	Base or mobile	
159.150	do	
159.210	do	
169–172	Mobile	30
173.075	Base or mobile	31
450–470	Fixed	15
453.050	Base or mobile	16
453.100	do	16
453.150	do	16
453.200	do	16
453.250	do	16
453.300	do	16
453.350	do	16
453.400	do	16
453.450	do	16
453.500	do	16
453.550	do	16
453.600	do	16
453.650	do	16
453.700	do	16
453.750	do	16
453.800	do	16
453.850	do	16
453.900	do	16
453.950	do	16
458.050	Mobile	16
458.100	do	16
458.150	do	16
458.200	do	16
458.250	do	16
458.300	do	16
458.350	do	16
458.400	do	16
458.450	do	16
458.500	do	16
458.550	do	16
458.600	do	16
458.650	do	16
458.700	do	16
458.750	do	16
458.800	do	16
458.850	do	16
458.900	do	16
458.950	do	16
460.025	Base or mobile	
460.050	do	
460.075	do	
460.100	do	
460.125	do	
460.150	do	
460.175	do	
460.200	do	
460.225	do	
460.250	do	
460.275	do	
460.300	do	
460.325	do	
460.350	do	
460.375	do	
460.400	do	
460.425	do	
460.450	do	
460.475	do	
460.500	do	
460.525	do	
460.550	do	
462.950	do	
462.975	do	
465.025	Mobile	
465.050	do	
465.075	do	
465.100	do	
465.125	do	
465.150	do	
465.175	do	
465.200	do	
465.225	do	
465.250	do	
465.275	do	
465.300	do	
465.325	do	
465.350	do	
465.375	do	
465.400	do	
465.425	do	
465.450	do	
465.475	do	
465.500	do	
465.525	do	
465.500	do	
467.950	do	
467.975	do	
470–512	do	
806–824	Mobile	
851–869	Base or mobile	
928 and above	Operational fixed	
929–930	Base only	
1427 to 1435	Operational fixed, base or mobile	
2450 to 2500	Base or mobile	
10,550 to 10,680*	do	

* The frequencies in the band 10.55–10.68 GHz are a able for Digital Termination Systems and for assoc internodal links in the Point-to-Point Microwave Radio Se ice. No new licenses will be issued under this subpar current licenses will be renewed.

(e) Explanation of assignment lim tations appearing in the frequen table of paragraph (d) of this sectio

(1) The use of this frequency is o secondary basis to any Canadian s tion.

(2) The frequency is available for a signment only in accordance with geographical assignment plan.

(3) Base stations operating on th frequency and rendering service state police mobile units may be a thorized to use a maximum outp power in excess of the maximum ind

in § 90.205 but not in excess of watts: *Provided*, That such oper- is secondary to other stations.

[Reserved]

This frequency may be assigned ed stations in Alaska for point-to- radiotelephone communications, type A3E emission with a maxi- output power of 750 watts on a ndary basis to zone and interzone ons and further subject to the ition that no harmful interfer- is caused to the service of any on, which in the discretion of the mission may have priority on the uency with which interference re-

This frequency is authorized for as a calling frequency; however, transmission of operating signals single short radio telegram is per- ible on a secondary basis to any ng signals.

) This frequency may be used only ng that period of time between 2 rs after local sunrise and 2 hours re local sunset.

) This frequency may be assigned ixed stations in the Police Radio vice in Alaska for point-to-point ra- elephone communication, using A3E emission and a maximum put power of 750 watts.

) This frequency is shared with the al Government Radio Service.

0) The maximum output power of transmitter authorized to operate this frequency, after June 1, 1956, ll not exceed two watts. Licensees ding a valid authorization as of e 1, 1956, for base or mobile station ration on this frequency, with a ver in excess of two watts, may con- ue to be authorized for such oper- on without regard to this power itation.

11) This frequency is reserved for ignment to stations for intersystem erations only: *Provided, however*, at licensees holding a valid authori- ion to use this frequency for local se or mobile operations as of June 1, 56, may continue to be authorized such use.

12) This frequency is reserved pri- arily for assignment to state police ensees. Assignments to other police ensees will be made only where the equency is required for coordinated operation with the state police system to which the frequency is assigned. Any request for such assignment must be supported by a statement from the state police system concerned indicating that the assignment is necessary for coordination of police activities.

(13) The frequencies available for use at operational fixed stations in the band 72-76 MHz are listed in § 90.257(a)(1). These frequencies, are shared with other services and are available only in accordance with the provisions of § 90.257.

(14) This frequency is available nationwide for use in police emergency communications networks operated under statewide law enforcement emergency communications plans. Operations authorized on this frequency which are not in accordance with this limitation may continue until January 1, 1985.

(15) The frequencies available for use at fixed stations in this band, and the requirements for assignment are set forth in § 90.261. Operation on these frequencies is secondary to stations in the Industrial and Land Transportation Radio Services where they are assigned for land mobile operations.

(16) This frequency is available in this service on a shared basis with all other Public-Safety Radio Services.

(17) This frequency is shared with the Fire and Special Emergency Radio Services.

(18) [Reserved]

(19) This frequency is available in this service only for systems licensed in this service prior to April 16, 1976, until March 1, 1986. Use of this frequency is shared with, and is on a primary basis to operations by licensees in the Special Emergency Radio Service.

(20) [Reserved]

(21) Subpart L contains rules for assignment of frequencies in the 470-512 MHz band.

(22) Subpart S contains rules for assignment of frequencies in the 806-824 MHz and 851-869 MHz bands.

(23) Assignment of frequencies above 928 MHz for operational-fixed stations is governed by part 94 of this chapter.

(24) This frequency band is available to stations in this service subject to the provisions of § 90.259.

(25) Available only on a shared basis with stations in other services, and subject to no protection from interference due to the operation of industrial, scientific, or medical (ISM) devices. In the 2483.5-2500 MHz band, no applications for new stations or modification to existing stations to increase the number of transmitters will be accepted. Existing licensees as of July 25, 1985, or on a subsequent date following as a result of submitting an application for license on or before July 25, 1985, are grandfathered and their operation is co-primary with the Radiodetermination Satellite Service.

(26) Rules concerning the use of this band for narrowband operations are set forth in § 90.271.

(27) Frequencies in this band are available only for one-way paging operations in accordance with § 90.494.

(28) In the State of Alaska only, the frequency 42.40 MHz is available for assignment on a primary basis to stations in the Common Carrier Rural Radio Service utilizing meteor burst communications. The frequency may be used by private radio stations for meteor burst communications on a secondary, noninterference basis. Usage shall be in accordance with part 22 or 90 of this chapter. Stations utilizing meteor burst communications shall not cause harmful interference to stations of other radio services operating in accordance with the allocation table.

(29) In the State of Alaska only, the frequency 45.90 MHz is available for assignment on a primary basis to private land mobile radio stations utilizing meteor burst communications. The frequency may be used by common carrier stations for meteor burst communications on a secondary, noninterference basis. Usage shall be in accordance with parts 22 and 90 of this chapter. Stations utilizing meteor burst communications shall not cause harmful interference to stations of other radio services operating in accordance with the allocation table.

(30) Frequencies in this band will be assigned for low power wireless microphones in accordance with the pr sions of § 90.265.

(31) This frequency is subject to t provisions of § 90.19(f)(5)(7).

(f) *Additional frequencies availab* In addition to the frequencies show in the frequency table of this sectio the following frequencies are availab in this service. (See also § 90.253.)

(1) Substitution of frequencies av able below 25 MHz may be made in cordance with the provisions § 90.263.

(2) [Reserved]

(3) Frequencies in the band 73.0-7 MHz may be assigned to stations thorized their use on or before Dece ber 1, 1961, but no new stations will authorized in this band, nor will e pansion of existing systems be perm ted.

(4) The frequency bands 31.99 32.00 MHz 33.00 to 33.01 MHz, 33.99 34.00 MHz, 37.93 to 38.00 MHz, 39. to 39.01 MHz, 33.99 to 40.00 MHz a 42.00 to 42.01 MHz are available for signment for developmental operati subject to the provisions of subpart

(5) A licensee in the Police Rad Service may use transmitters on th frequencies indicated below in conne tion with official police activities wit out specific authorization from th Commission, provided that such u shall be on a secondary basis and sha not cause harmful interference services of other licensees operati on regularly assigned frequencies, a further provided that all such u complies with the requirements Federal, State and local laws.

The provisions of § 90.429 of th part shall not apply to transmitte authorized under this paragraph. T be eligible for operations in th manner, the transmitter must comp with all of the following requireme

(i) In accordance with § 90.203 this part and § 2.803 of part 2 of th chapter, the transmitter must be of type which has been type accepted b the Commission.

(ii) The carrier frequency shall b within the bands of

30.85-30.87 MHz
30.89-30.91 MHz
30.93-30.95 MHz
30.97-30.99 MHz
31.01-31.03 MHz

31.05-31.07 MHz
31.09-31.11 MHz
31.13-31.15 MHz
31.17-31.19 MHz
31.21-31.23 MHz
31.25-31.27 MHz
31.29-31.31 MHz
31.33-31.35 MHz
31.37-31.39 MHz
31.41-31.43 MHz
31.45-31.47 MHz
31.49-31.51 MHz
31.53-31.55 MHz
31.57-31.59 MHz
31.61-31.63 MHz
31.65-31.67 MHz
31.69-31.71 MHz
31.73-31.75 MHz
31.77-31.79 MHz
31.81-31.83 MHz
31.85-31.87 MHz
31.89-31.91 MHz
31.93-31.95 MHz
31.97-32.00 MHz
33.00-33.03 MHz
33.05-33.07 MHz
33.41-34.00 MHz
37.00-37.43 MHz
37.89-38.00 MHz
39.00-40.00 MHz
42.00-42.91 MHz
44.61-45.91 MHz
45.93-45.95 MHz
45.97-45.99 MHz
46.01-46.03 MHz
46.05-46.60 MHz
47.00-47.41 MHz
150.995-151.490 MHz
153.740-154.445 MHz
154.635-155.195 MHz
155.415-156.250 MHz
158.715-159.465 MHz
453.0125-453.9875 MHz
458.0125-458.9875 MHz
460.0125-465.5125 MHz
460.5625-460.6375 MHz
462.9375-462.9875 MHz
465.0125-460.5125 MHz
465.5625-465.6375 MHz
467.9375-467.9875 MHz

and must be maintained within 0.005 percent of the frequency of operation. Use on assigned channel center frequencies is not required.

(iii) The emitted signal shall be non-voice modulation (type PO emission).

(iv) The maximum occupied bandwidth, containing 99 percent of the radiated power, shall not exceed 2.0 kHz.

(v) The transmitter output power shall not exceed a mean power of 30 mW nor shall any peak exceed 1 watt peak power, as measured into a 50 ohm resistive load. Should the transmitter be supplied with a permanently attached antenna or should the transmitter and antenna combination be contained in a sealed unit, the following standard may be used in lieu of the above: The field strength of the fundamental signal of the transmitter and antenna combination shall not exceed 0.4 V/m mean or 2.3 V/m peak when measured at a distance of 3 meters.

(vi) The transmitter shall contain positive means to limit the transmission time to no more than 10 days. In the event of a malfunction of this positive means, the transmitter signal shall cease. The use of battery life to accomplish the transmission time limitation is permissible.

(6) Frequencies in the 421-430 MHz band are available in the Detroit, Cleveland, and Buffalo areas in accordance with the rules in §§ 90.273 through 90.281.

(7) The frequency 173.075 MHz is available for stolen vehicle recovery systems on a shared basis with the Federal Government. Stolen vehicle recovery systems are limited to recovering stolen vehicles and are not authorized for general purpose vehicle tracking or monitoring. Mobile transmitters operating on this frequency are limited to 2.5 watts power output and base transmitters are limited to 300 watts ERP. F1D and F2D emissions may be used within a maximum authorized 20 kHz bandwidth. Transmissions from mobiles shall be limited to 200 milliseconds every 10 seconds, except that when a vehicle is being tracked actively, transmissions may be increased to 200 milliseconds every second. Transmissions from base stations will be limited to a total time of 1 second every minute. Applications for base stations operating on this frequency shall require coordination with the Federal Government. Applicants shall perform an analysis for each base station located within 105 miles of a TV channel 7 transmitter of potential interference to TV channel 7 viewers. Such stations will be authorized if the applicant has limited the interference contour to fewer than 100 residences or if the applicant: (i) Shows that the proposed site is the only suitable location; (ii) develops a plan to control any interference

caused to TV reception from the operations; and (iii) agrees to make such adjustments in the TV receivers affected as may be necessary to eliminate interference caused by its operations. The licensee must eliminate any interference caused by its operation to TV channel 7 reception within 30 days of the time it is notified in writing by the commission. If this interference is not removed within the 30 day period, operation of the base station must be discontinued. The licensee is expected to help resolve all complaints of interference.

(g) *Limitation on number of frequencies assignable.* Normally only one base and one mobile station frequency, will be assigned for mobile service operations by a single applicant in a given area. The assignment of an additional frequency or pair of frequencies will be made only upon a satisfactory showing of need, except that:

(1) Additional frequencies above 25 MHz may be assigned in connection with operation of mobile repeaters in accordance with § 90.247, notwithstanding this limitation.

(2) The frequency 39.06 MHz may be assigned notwithstanding this limitation.

(3) A licensee may use, without special authorization from the Commission, any mobile service frequency between 40 and 952 MHz, listed in subpart B of this part of the rules, for communications in connection with physical surveillance, stakeouts, raids, and other such activities. Such use shall be on a secondary basis to operations of licensees regularly authorized on the assigned frequencies. The maximum output power that may be used for such communications is 2 watts. Transmitters, operating under this provision of the rules, shall be exempted from the station identification requirements of § 90.425. Use of Public Safety frequencies not listed in paragraph (d) of this section is conditional on the approval of the coordinator corresponding to each frequency. Spread spectrum transmitters may be operated on Public Safety frequencies between 37 and 952 MHz, providing that they are type accepted by the Commission under the provisions of §§ 2.803 and 90.203 of the rules, and meet the following conditions:

(i) Frequency hopping transmitters can be operated, with a maximum output power of 2 watts, on any Public Safety mobile service frequency between 37 and 952 MHz listed in subpart B of this part. At least 20 hopping frequencies shall be used and the average time of occupancy on any frequency shall not be greater than 1/10 second in every 2 seconds;

(ii) Use of spread spectrum transmitters under this section of the rules is subject to approval by the applicable frequency coordinator of the radio services of the district in which the license and equipment are to be used.

(4) In addition to the frequencies assigned for mobile service operation, one base station frequency above 152 MHz may be assigned as a common frequency to all licensees in a particular area to permit intersystem communication between base stations or mobile stations or both. This frequency, use will not be authorized in any area where all available frequencies are required for independent systems.

(5) Frequencies in the 25-50 MHz, 150-170 MHz, and 450-512 MHz bands and the frequency bands, 903-904 MHz, 904-912 MHz, 918-926 MHz, and 926-927 MHz may be assigned for the operation of Automatic Vehicle Monitoring (AVM) systems in accordance with § 90.239, notwithstanding this limitation.

(6) A licensee of a radio station in this service may operate radio units for the purpose of determining distance, direction, speed, or position by means of a radiolocation device on any frequency available for radiolocation purposes without specific authorization from the Commission, provided type accepted equipment or equipment authorized pursuant to § 90.203(b)(4) and (5) is used and all other rule requirements are satisfied.

(Secs. 4, 303, 307, 48 Stat., as amended, 1066, 1082, 1083; 47 U.S.C. 154, 303, 307, secs. 4(i) and 303(r), Communications Act of 1934, as amended, §§ 0.131 and 0.331 of the Commission's Rules and 5 U.S.C. 553 (b)(3)(B) and (d)(3))

[43 FR 54791, Nov. 22, 1978]

EDITORIAL NOTE: For Federal Register citations affecting § 90.19, see the List of CFR Sections Affected in the Finding Aids section of this volume.

§ 90.21 Fire Radio Service.

(a) *Eligibility.* Any territory, possession, state, county, city, town, or similar governmental entity, and persons or organizations charged with specific fire protection activities are eligible to hold authorizations in the Fire Radio Service to operate radio stations for transmission of communications essential to official fire activities of the licensee. Applications from persons or organizations other than governmental entities must be accompanied by a statement from the governmental entity having legal jurisdiction over the area to be served, supporting the request.

(b) *Frequencies available.* The following table indicates frequencies available for assignment to stations in the Fire Radio Service, together with the class of station(s) to which they are normally assigned and the specific assignment limitations which are explained in paragraph (c) of this section:

Fire Radio Service Frequency Table

Frequency or band	Class of station(s)	Limitations
Kilohertz: 1630	Base or mobile	
Megahertz:		
33.42	Mobile or fixed	1
33.44	Base or mobile	
33.46	Mobile	
33.48	Base or mobile	
33.50	Mobile	
33.52	Base or mobile	
33.54	Mobile	
33.56	Base or mobile	
33.58	Mobile	
33.60	Base or mobile	
33.62	Mobile	
33.64	Base or mobile	
33.66	Mobile	
33.68	Base or mobile	
33.70	do	
33.72	do	
33.74	do	
33.76	do	
33.78	do	
33.80	do	
33.82	do	
33.84	do	
33.86	do	
33.88	do	
33.90	do	
33.92	do	
33.94	do	

Fire Radio Service Frequency Table—Continued

Frequency or band	Class of station(s)	Limitations
33.96	do	
33.98	do	
45.88	do	2
46.06	do	
46.08	do	
46.10	do	
46.12	do	
46.14	do	
46.16	do	
46.18	do	
46.20	do	
46.22	Mobile	
46.24	do	
46.26	do	
46.28	do	
46.30	Mobile or fixed	1
46.32	Mobile	
46.34	do	
46.36	Base or mobile	
46.38	do	
46.40	do	
46.42	do	
46.44	do	
46.46	do	
46.48	do	
46.50	do	
72.00 to 76.00	Operational fixed	3
150-170	Base or mobile	16
153.77	Mobile	
153.83	Mobile or fixed	1
153.890	Mobile	
153.950	do	
154.010	do	
154.070	do	4
154.130	Base or mobile	4
154.145	do	4
154.160	do	4
154.175	do	4
154.190	do	4
154.205	do	4
154.220	do	4
154.235	do	4
154.250	do	4
154.265	do	2, 4
154.280	do	2, 4
154.295	do	2, 4
154.310	do	4
154.325	do	4
154.340	do	4
154.355	do	4
154.370	do	4
154.385	do	4
154.400	do	4
154.415	do	4
154.430	do	4
154.445	do	4
166.250	do	5
169-172	Mobile	14
170.150	Base or mobile	5
450-470	Fixed	6
453.050	Base or mobile	7
453.100	do	7
453.150	do	7
453.200	do	7
453.250	do	7
453.300	do	7
453.350	do	7
453.400	do	7

Fire Radio Service Frequency Table—Continued

Frequency or band	Class of station(s)	Limitations
453.450	do	7
453.500	do	7
453.550	do	7
453.600	do	7
453.650	do	7
453.700	do	7
453.750	do	7
453.800	do	7
453.850	do	7
453.900	do	7
453.950	do	7
458.050	Mobile	7
458.100	do	7
458.150	do	7
458.200	do	7
458.250	do	7
458.300	do	7
458.350	do	7
458.400	do	7
458.450	do	7
458.500	do	7
458.550	do	7
458.600	do	7
458.650	do	7
458.700	do	7
458.750	do	7
458.800	do	7
458.850	do	7
458.900	do	7
458.950	do	7
460.525	Base or Mobile	8
460.550	do	8
460.575	do	
460.600	do	
460.625	do	
465.525	Mobile	8
465.550	do	8
465.575	do	
465.600	do	
465.625	do	
470–512	Base or mobile	9
806–824	Mobile	10
851 to 869	Base or mobile	10
928 and above	Operational-fixed	11
929 to 930	Base only	15
1427 to 1435	Operational-fixed, base or mobile.	12
2450 to 2500	Base or mobile	13
10,550 to 10,680*	do	

* The frequencies in the band 10.55–10.68 GHz are available for Digital Termination Systems and for associated internodal links in the Point-to-Point Microwave Radio Service. No new licenses will be issued under this subpart but current licenses will be renewed.

(c) Explanation of assignment limitations appearing in the frequency table of paragraph (b) of this section:

(1) The maximum output power of any transmitter authorized to operate on this frequency shall not exceed 10 watts.

(2) This frequency is reserved for assignment to stations in this service for intersystem operations only and these operations must be primarily base-mobile communications.

(3) The frequencies available for use at operational fixed stations in the band 72-76 MHz are listed in § 90.257(a)(1). These frequencies are shared with other services and are available only in accordance with the provisions of § 90.257.

(4) This frequency is not available for assignment to stations in this service in Puerto Rico or the Virgin Islands.

(5) This frequency may be assigned to stations in the Fire Radio Service only at points within 240 km. (150 mi.) of New York, NY.

(6) The frequencies available for use at fixed stations in this band, and the requirements for assignment are set forth in § 90.261. Operation on these frequencies is secondary to stations in the Industrial and Land Transportation Radio Services where they are assigned for land mobile operations.

(7) This frequency is available in this service on a shared basis with all other Public-Safety Radio Services.

(8) This frequency is shared with the Police and Special Emergency Radio Services.

(9) Subpart L contains rules for assignment of frequencies in the 470-512 MHz band.

(10) Subpart S contains rules for assignment of frequencies in the 806-824 MHz and 851-869 MHz bands.

(11) Assignment of frequencies above 928 MHz for operational-fixed stations is governed by part 94 of this chapter.

(12) This frequency band is available to stations in this service subject to the provisions of § 90.259.

(13) Available only on a shared basis with stations in other services, and subject to no protection from interference due to the operation of industrial, scientific, or medical (ISM) devices. In the 2483.5-2500 MHz band, no applications for new stations or modification to existing stations to increase the number of transmitters will be accepted. Existing licensees as of July 25, 1985, or on a subsequent date following as a result of submitting an application for license on or before July 25, 1985, are grandfathered and their

operation is co-primary with the Radiodetermination Satellite Service.

(14) Frequencies in this band will be assigned for low power wireless microphones in accordance with the provisions of § 90.265.

(15) Frequencies in this band are available only for one-way paging operations in accordance with § 90.494.

(16) Rules concerning the use of this band for narrowband operations are set forth in § 90.271.

(d) *Additional frequencies available.* In addition to the frequencies shown in the frequency table of this section, the following frequencies are available in this service. (See also § 90.253.)

(1) Substitution of frequencies available below 25 MHz may be made in accordance with the provisions of § 90.263.

(2) [Reserved]

(3) Frequencies in the band 73.0-74.6 MHz may be assigned to stations authorized their use on or before December 1, 1961, but no new stations will be authorized in this band, nor will expansion of existing systems be permitted. (See also § 90.257.)

(4) The frequency bands 31.99 to 32.00 MHz, 33.00 to 33.01 MHz, 33.99 to 34.00 MHz, 37.93 to 38.00 MHz, 39.00 to 39.01 MHz, 39.99 to 40.00 MHz and 42.00 to 42.01 MHz, are available for assignment for developmental operation subject to the provisions of subpart Q.

(5) Frequencies in the 421-430 MHz band are available in the Detroit, Cleveland, and Buffalo areas in accordance with the rules in §§ 90.273 through 90.281.

(e) *Limitation on number of frequencies assignable.* Normally only two frequencies or pairs of frequencies in the paired frequency mode of operation, will be assigned for mobile service operations by a single applicant in a given area. The assignment of an additional frequency or pair of frequencies will be made only upon a satisfactory showing of need, except that:

(1) Additional frequencies above 25 MHz may be assigned in connection with the operation of mobile repeaters in accordance with § 90.247, notwithstanding this limitation.

(2) The assignment of an additional frequency or frequencies may be authorized notwithstanding this limitation for common, intra-county, intra-fire-district, or intrastate fire coordination operations. The frequency or frequencies requested must be in accordance with a frequency utilization plan, for the area involved, on file with the Commission.

(3) Frequencies in the 25-50 MHz, 150-170 MHz, and 450-512 MHz bands, and the frequency bands 903-904 MHz, 904-912 MHz, 918-926 MHz, and 926-927 MHz may be assigned for the operation of Automatic Vehicle Monitoring (AVM) systems in accordance with § 90.239, notwithstanding this limitation.

(4) A licensee of a radio station in this service may operate radio units for the purpose of determining distance, direction, speed, or position by means of a radiolocation device on any frequency available for radiolocation purposes without specific authorization from the Commission, provided type accepted equipment or equipment authorized pursuant to § 90.203(b) (4) and (5) is used and all other rule requirements are satisfied.

(Secs. 4, 303, 307, 48 Stat., as amended, 1066, 1082, 1083; 47 U.S.C. 154, 303, 307; secs. 4(i) and 303(r), Communications Act of 1934, as amended, §§ 0.131 and 0.331 of the Commission's Rules and 5 U.S.C. 553 (b)(3)(B) and (d)(3))

[43 FR 54791, Nov. 22, 1978]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 90.21, see the List of CFR Sections Affected in the Finding Aids section of this volume.

§ 90.23 Highway Maintenance Radio Service.

(a) *Eligibility.* Any territory, possession, State, county, city, town, and similar governmental entity is eligible to hold authorizations in the Highway Maintenance Radio Service to operate stations for transmission of communications essential to official highway activities of the licensee.

(b) *Frequencies available.* The following table indicates frequencies available for assignment to stations in the Highway Maintenance Radio Service, together with the class of station(s) to which they are normally assigned and the specific assignment limitations which are explained in paragraph (c) of this section:

Highway Maintenance Radio Service Frequency Table

Frequency or band	Class of station(s)	Limitations
Megahertz:		
33.02	Base or mobile	1
33.06	......do	1
33.10	......do	1
37.90	......do	1
37.92	......do	
37.94	......do	1
37.96	......do	
37.98	......do	1
45.68	......do	
45.72	......do	
45.76	......do	
45.80	......do	
45.84	......do	
47.02	......do	2, 17
47.04	......do	2, 17
47.06	......do	2, 17
47.08	......do	2, 17
47.10	......do	2, 17
47.12	......do	2, 17
47.14	......do	2, 17
47.16	......do	2, 17
47.18	......do	2, 17
47.20	......do	2, 17
47.22	......do	2, 17
47.24	......do	2, 17
47.26	......do	2, 17
47.28	......do	2, 17
47.30	......do	2, 17
47.32	......do	2, 17
47.34	......do	2, 17
47.36	......do	2, 17
47.38	......do	2, 17
47.40	......do	2, 17
72.00 to 76.00	Operational fixed	3
150-170	Base or mobile	16
150.995	Base or Mobile	4
151.010	......do	4
151.025	......do	4
151.040	......do	4
151.055	......do	4
151.070	......do	4
151.085	......do	4
151.100	......do	4
151.115	......do	4
151.130	......do	4
156.045	Mobile	14
156.060	......do	14
156.075	......do	
156.105	Base or mobile	
156.120	......do	
156.135	......do	
156.165	......do	5, 14
156.180	......do	5, 14
156.195	......do	5
156.225	......do	5
156.240	......do	5
157.050	......do	6
157.110	......do	6
158.985	Mobile	5
159.000	......do	5
159.015	......do	5
159.045	......do	5
159.060	......do	5
159.075	......do	
159.105	Base or mobile	
159.120	......do	
159.135	......do	
159.165	......do	
159.190	......do	
159.195	......do	
169-172	Mobile	
450-470	Fixed	
453.050	Base or mobile	
453.100	......do	
453.150	......do	
453.200	......do	
453.250	......do	
453.300	......do	
453.350	......do	
453.400	......do	
453.450	......do	
453.500	......do	
453.550	......do	
453.600	......do	
453.650	......do	
453.700	......do	
453.750	......do	
453.800	......do	
453.850	......do	
453.900	......do	
453.950	......do	
458.050	Mobile	
458.100	......do	
458.150	......do	
458.200	......do	
458.250	......do	
458.300	......do	
458.350	......do	
458.400	......do	
458.450	......do	
458.500	......do	
458.550	......do	
458.600	......do	
458.650	......do	
458.700	......do	
458.750	......do	
458.800	......do	
458.850	......do	
458.900	......do	
458.950	......do	
470-512	Base or mobile	
806-824	Mobile	
851 to 869	Base or mobile	
928 and above	Operational-fixed	
929 to 930	Base only	
1427 to 1435	Operational-fixed, base or mobile	
2450-2500	Base or mobile	
10,550 to 10,680*	......do	

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* The frequencies in the band 10.55-10.68 GHz are av able for Digital Termination Systems and for associa internodal links in the Point-to-Point Microwave Radio Ser ice. No new licenses will be issued under this subpart b current licenses will be renewed.

(c) Explanation of assignment limitations appearing in the frequenc table of paragraph (b) of this sectio

(1) This frequency is shared with the Special Emergency Radio Service.

(2) This frequency will be assigned only in accordance with a geographical assignment plan and is reserved primarily for assignment to Highway Maintenance systems operated by states. The use of this frequency by other Highway maintenance licensees will be authorized only where such use is necessary to coordinate activities with the particular state to which the frequency is assigned. Any request for such use must be supported by a statement from the state concerned.

(3) The frequencies available for use at operational fixed stations in the band 72-76 MHz are listed in § 90.257(a)(1). These frequencies, are shared with other services and are available only in accordance with the provisions of § 90.257.

(4) This frequency is not available for assignment to stations in the Highway Maintenance Radio Service located in Puerto Rico and the Virgin Islands.

(5) This frequency is reserved for assignment for use in highway maintenance systems operated by licenses other than States.

(6) This frequency is only assigned to Highway Maintenance stations licensed for its use prior to April 28, 1952. Such use may continue on a secondary basis to any government or non-government radio operation.

(7) The frequencies available for use at fixed stations in this band, and the requirements for assignment are set forth in § 90.261. Operation on these frequencies is secondary to stations in the Industrial and Land Transportation Radio Services where they are assigned for land mobile operations.

(8) This frequency is available in this service on a shared basis with all other Public-Safety Radio Services.

(9) Subpart L contains rules for assignment of frequencies in the 470-512 MHz band.

(10) Subpart S contains rules for assignment of frequencies in the 806-824 MHz and 851-869 MHz bands.

(11) Assignment of frequencies above 928 MHz for operational-fixed stations is governed by part 94 of this chapter.

(12) This frequency band is available to stations in this service subject to the provisions of § 90.259.

(13) Available only on a shared basis with stations in other services, and subject to no protection from interference due to the operation of industrial, scientific, or medical (ISM) devices. In the 2483.5-2500 MHz band, no applications for new or modification to existing stations to increase the number of transmitters will be accepted. Existing licensees as of July 25, 1985, or on a subsequent date following as a result of submitting an application for license on or before July 25, 1985, are grandfathered and their operation is co-primary with the Radiodetermination Satellite Service.

(14) This frequency may not be assigned with 100 miles of New Orleans (coordinates 29-56-53 N and 90-04-10 W).

(15) Frequencies in this band will be assigned for low power wireless microphones in accordance with the provisions of § 90.265.

(16) Frequencies in this band are available only for one-way paging operations in accordance with § 90.494.

(17) Notwithstanding the provisions of limitation (2) above, this frequency may be used by licensees in any of the Public Safety Radio Services without a separate license for the purpose of operating self-powered vehicle detectors for traffic control and safety purposes, on a secondary basis, in accordance with § 90.269 of this chapter.

(18) Rules concerning the use of this band for narrowband operations are set forth in § 90.271.

(d) *Additional frequencies available.* In addition to the frequencies shown in the frequency table of this section, the following frequencies are available in this service. (See also § 90.253.)

(1) [Reserved]

(2) The frequency bands 31.99 to 32.00 MHz, 33.00 to 33.01 MHz, 33.00 to 33.01 MHz, 33.99 to 34.00 MHz, 37.93 to 38.00 39.00 to 39.01 MHz, 39.99 to 40.00 MHz and 42.00 to 42.01 MHz are available for assignment for developmental operation subject to the provisions of subpart Q.

(3) Frequencies in the band 73.0-74.6 MHz may be assigned to stations authorized their use on or before Decem-

ber 1, 1961, but no new stations will be authorized in this band, nor will expansion of existing systems be permitted. (See also § 90.257.)

(4) Frequencies in the 421-430 MHz band are available in the Detroit, Cleveland, and Buffalo areas in accordance with the rules in §§ 90.273 through 90.281.

(e) *Limitation on number of frequencies assignable.* Normally only two frequencies or pairs of frequencies in the paired frequency mode of operation, will be assigned for mobile service operations by a single applicant in a given area. The assignment of an additional frequency or pair of frequencies will be made only upon a satisfactory showing of need, except that:

(1) Additional frequencies above 25 MHz may be assigned in connection with the operation of mobile repeaters in accordance with § 90.247, notwithstanding this limitation.

(2) Frequencies in the 25-50 MHz, 150-170 MHz and 450-512 MHz bands, and the frequency bands 903-904 MHz, 904-912 MHz 918-926 MHz and 926-927 MHz may be assigned for the operation of Automatic Vehicle Monitoring (AVM) systems in accordance with § 90.239, notwithstanding this limitation.

(3) A licensee of a radio station in this service may operate radio units for the purpose of determining distance, direction, speed, or position by means of a radiolocation device on any frequency available for radiolocation purposes without specific authorization from the Commission, provided type accepted equipment or equipment authorized pursuant to § 90.203(b)(4) and (5) is used and all other rule requirements are satisfied.

(Secs. 4(i) and 303(r), Communications Act of 1934, as amended, §§ 0.131 and 0.331 of the Commission's Rules and 5 U.S.C. 553 (b)(3)(B) and (d)(3); 47 U.S.C. 154(i) and 303)

[43 FR 54791, Nov. 22, 1978]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 90.23, see the List of CFR Sections Affected in the Finding Aids section of this volume.

§ 90.25 Forestry-Conservation Radio Service.

(a) *Eligibility.* Any territory, possession, State, county, city, town, and similiar governmental entity, or persons or organizations charged with specific forestry-conservation activities are eligible to hold authorizations in the Forestry-Conservation Radio Service to operate radio stations for transmission of communications essential to official forestry-conservation activities of the licensee. Application from persons or organizations other than governmental entities must be accompanied by a statement from the governmental entity having legal jurisdiction over the area to be served, supporting the request.

(b) *Frequencies available.* The following table indicates frequencies available for assignment to stations in the Foresty-Conservation Radio Service, together with the class of station(s) to which they are normally assigned and the specific assignment limitations which are explained in paragraph (c) of this section:

Forestry-Conservation Radio Service Frequency Table

Frequency or band	Class of stations(s)	Limitations
Kilohertz:		
2212	Base or mobile	1
2226	do	1
2236	do	1
2244	do	1
Megahertz:		
30.86	do	2
30.90	do	2
30.94	do	2
30.98	do	2
31.02	do	2
31.06	do	2, 3, 4
31.10	do	2, 3, 4
31.14	do	2, 3, 4
31.18	do	3, 4
31.22	do	3, 4
31.26	do	3, 4
31.30	do	3, 4
31.34	do	3, 4
31.38	do	3, 4
31.42	do	3, 4
31.46	do	3, 4
31.50	do	3, 4
31.54	do	3, 4
31.58	do	3, 4
31.62	do	3, 4
31.66	do	3, 4
31.70	do	3, 4
31.74	do	3, 4
31.78	do	3, 4
31.82	do	3, 4

Forestry-Conservation Radio Service Frequency Table—Continued

requency or band	Class of stations(s)	Limitations
1.86	do	3, 4
1.90	do	3, 4
1.94	do	3, 4
1.98	do	3, 4
4.64	do	
4.68	do	
4.72	do	
4.76	do	
4.80	do	
4.84	do	
4.88	do	
4.92	do	
4.96	do	
5.00	do	
5.04	do	
2.00 to 76.00	Operational fixed	5
50-170	Base or mobilo	22
51.145	do	6
51.160	do	6
51.175	do	6
51.190	do	6
51.205	do	6
51.220	do	6
51.235	do	6
51.250	do	6
51.265	do	6
51.280	do	6
51.295	do	6
51.310	do	6
51.325	do	6
51.340	do	6
51.355	do	6
51.370	do	6
51.385	do	6
51.400	do	6
51.415	do	6
51.430	do	6
51.445	do	6
51.460	do	6
51.475	do	6
51.490	do	6, 7
59.225	do	
59.240	do	8
59.255	do	8
59.270	do	8
59.285	do	8
9.300	do	8
59.315	do	8
9.330	do	8
9.345	do	8
9.360	do	8
9.375	do	8
9.390	do	8
9.405	do	8
9.420	do	8
9.435	do	8
9.450	do	
9.465	do	
9-172	Mobile	20
0.425	Base or mobile	4, 9, 10
0.475	do	4, 9, 11
0.575	do	4, 9, 10
1.425	do	4, 9, 11
1.475	do	4, 10, 12
1.575	do	4, 9, 11
2.225	do	4, 9, 10
2.275	do	4, 11, 12
2.375	do	4, 9, 10

Forestry-Conservation Radio Service Frequency Table—Continued

Frequency or band	Class of stations(s)	Limitations
450-470	Fixed	13
453.050	Base or mobile	14
453.100	do	14
453.150	do	14
453.200	do	14
453.250	do	14
453.300	do	14
453.350	do	14
453.400	do	14
453.450	do	14
453.500	do	14
453.550	do	14
453.600	do	14
453.650	do	14
453.700	do	14
453.750	do	14
453.800	do	14
453.850	do	14
453.900	do	14
453.950	do	14
458.050	Mobile	14
458.100	do	14
458.150	do	14
458.200	do	14
458.250	do	14
458.300	do	14
458.350	do	14
458.400	do	14
458.450	do	14
458.500	do	14
458.550	do	14
458.600	do	14
458.650	do	14
458.700	do	14
458.750	do	14
458.800	do	14
458.850	do	14
458.900	do	14
458.950	do	14
470-512	Base or mobile	15
806 to 824	Mobile	16
851 to 869	Base or mobile	16
928 and above	Operational-fixed	17
929 to 930	Base only	21
1427 to 1435	Operational-fixed, base or mobile.	18
2450 to 2500	Base or mobile	19
10,550 to 10,680*	do	

* The frequencies in the band 10.55-10.68 GHz are available for Digital Termination Systems and for associated internodal links in the Point-to-Point Microwave Radio Service. No new licenses will be issued under this subpart but current licenses will be renewed.

(c) Explanation of assignment limitations appearing in the frequency table of paragraph (b) of this section:

(1) The use of this frequency is on a secondary basis to any Canadian station.

(2) This frequency is shared with the Motor Carrier Radio Service.

(3) This frequency is available for assignment only in accordance with a geographical assignment plan. This

frequency may be used for conservation activities on a secondary basis to any station using the frequency for forest fire prevention, detection, and suppression.

(4) This frequency is reserved primarily for assignment to state licensees. Assignments to other licensees will be made only where the frequency is required for coordinated operation with the State system to which the frequency is assigned. Any request for such assignment must be supported by a statement from the State system concerned, indicating that the assignment is necessary for coordination of activities.

(5) The frequencies available for use at operational-fixed stations in the band 72-76 MHz are listed in § 90.257(a)(1). These frequencies are shared with other services and are available only in accordance with the provisions of § 90.257.

(6) This frequency is not available for assignment to stations in this service located in Puerto Rico or the Virgin Islands.

(7) This frequency is shared with stations in the Special Industrial Radio Service and evidence of interservice coordination is required.

(8) This frequency is shared with the Special Industrial Radio Service in Puerto Rico and the Virgin Islands. All applications for the assignment of a new frequency or to change existing facilities in such a manner as to require frequency coordination as specified in § 90.175 for stations in Puerto Rico or the Virgin Islands, shall be accompanied by evidence of interservice frequency coordination.

(9) This frequency will be assigned only to licensees directly responsible for the prevention, detection, and suppression of forest fires, on a secondary basis to any U.S. Government station.

(10) This frequency will be assigned for use only in areas west of the Mississippi River.

(11) This frequency will be assigned for use only in areas east of the Mississippi.

(12) In addition to agencies responsible for forest fire prevention, detection, and suppression, this frequency may be assigned to conservation agencies which do not have forest fire responsibilities on a secondary basis any U.S. Government stations, *Provi ed*, That such assignment is necessa to permit mobile relay operation such agencies.

(13) The frequencies available use at fixed stations in this band, a the requirements for assignment set forth in § 90.261. Operation these frequencies is secondary to s tions in the Industrial and La Transportation Radio Services whe they are assigned for land mobile o erations.

(14) This frequency is available this service on a shared basis with other Public Safety Services.

(15) Subpart L contains rules for signment of frequencies in the 470-5 MHz band.

(16) Subpart S contains rules for signment of frequencies in the 806-8 MHz and 851-869 MHz bands.

(17) Assignment of frequenc above 928 MHz for operational-fix stations is governed by part 94 of th chapter.

(18) This frequency band is availab to stations in this service subject the provisions of § 90.259.

(19) Available only on a shared ba with stations in other services, a subject to no protection from interfe ence due to the operation of industr al, scientific, or medical (ISM) device In the 2483.5-2500 MHz band, no a plications for new stations or modific tion to existing stations to increas the number of transmitters will be a cepted. Existing licensees as of Ju 25, 1985, or on a subsequent date fo lowing as a result of submitting an a plication for license on or before Ju 25, 1985, are grandfathered, and the operation is co-primary with the Ra diodetermination Satellite Service.

(20) Frequencies in this band will b assigned for low power wireless micr phones in accordance with the pro sions of § 90.265.

(21) Frequencies in this band a available only for one-way paging o erations in accordance with § 90.494.

(22) Rules concerning the use of th band for narrowband operations a set forth in § 90.271.

(d) *Additional frequencies availab* In addition to the frequencies show in the frequency table of this sectio the following frequencies are available in this service. (See also § 90.253.)

(1) Substitution of frequencies available below 25 MHz may be made in accordance with the provisions of § 90.263.

(2) [Reserved]

(3) Frequencies in the band 73.0-74.6 MHz may be assigned to stations authorized their use on or before December 1, 1961, but no new stations will be authorized in this band, nor will expansion of existing systems be permitted. (See also § 90.257.)

(4) The frequency bands 31.99 to 32.00 MHz, 33.00 to 33.01 MHz, 33.99 to 34.00 MHz, 37.93 to 38.00 MHz, 39.00 to 39.01 MHz, 39.99 to 40.00 MHz, and 42.00 to 42.01 MHz are available for assignment for developmental operation subject to the provisions of subpart Q.

(5) Frequencies in the 421-430 MHz band are available in the Detroit, Cleveland, and Buffalo areas in accordance with the rules in §§ 90.273 through 90.281.

(e) *Limitation on number of frequencies assignable.* Normally only two frequencies or pairs of frequencies in the paired frequency mode of operation, will be assigned for mobile service operations by a single applicant in a given area. The assignment of an additional frequency or pair of frequencies will be made only upon a satisfactory showing of need, except that:

(1) Additional frequencies above 25 MHz may be assigned in connection with the operation of mobile repeaters in accordance with § 90.247 notwithstanding this limitation.

(2) Frequencies in the 25-50 MHz, 150-170 MHz, and 450-512 MHz bands, and the frequency bands 903-904 MHz, 904-912 MHz, 918-926 MHz, and 926-927 MHz may be assigned for the operation of Automatic Vehicle Monitoring (AVM) systems in accordance with § 90.239, notwithstanding this limitation.

(3) A licensee of a radio station in this service may operate radio units for the purpose of determining distance, direction, speed, or position by means of a radiolocation device on any frequency available for radiolocation purposes without specific authorization from the Commission, provided type accepted equipment or equipment authorized pursuant to § 90.203(b)(4) and (5) is used and all other rule requirements are satisfied.

(f) A licensee in the Forestry-Conservation Radio Service may use, without a specific authorization from the Commission, transmitters on the frequencies indicated below in connection with wildlife tracking and/or telemetry and in connection with official forestry-conservation activities, provided that such use shall be on a secondary basis and shall not cause harmful interference to services of other licensees operating on regularly assigned frequencies. The provisions of §§ 90.203, 90.425, and 90.429 of this part shall not apply to transmitters complying with this subparagraph. To be eligible for operations in this manner, the transmitter must comply with all of the following requirements.

(1) The carrier frequency shall be within the bands of:

(MHz)

31.17 to 31.19
31.21 to 31.23
31.25 to 31.27
31.29 to 31.31
31.33 to 31.35
31.37 to 31.39
31.41 to 31.43
31.45 to 31.47
31.49 to 31.51
31.53 to 31.55
31.57 to 31.59
31.61 to 31.63
31.65 to 31.67
31.69 to 31.71
31.73 to 31.75
31.77 to 31.79
31.81 to 31.83
31.85 to 31.87
31.89 to 31.91
31.93 to 31.95
31.97 to 31.99
44.63 to 44.65
44.67 to 44.69
44.71 to 44.73
44.75 to 44.77
44.79 to 44.81
44.83 to 44.85
44.87 to 44.89
44.91 to 44.93
44.95 to 44.97
44.99 to 45.01
45.03 to 45.05
151.145 to 151.475
159.225 to 159.465

The carrier frequency must be maintained within 0.005 percent of the frequency of operation. Use on assigned channel center frequencies is not required.

(2) The emitted signal shall be nonvoice modulation (A1D, A2D, F1D, or F2D emission).

(3) The maximum occupied bandwidth, containing 99 percent of the radiated power, shall not exceed 0.25 kHz.

(4) The transmitter output power shall not exceed a mean power of 5 mW nor shall any peak exceed 100 mW peak power, as measured into a

permanently attached antenna; or if the transmitter and antenna combination are contained in a sealed unit, the field strength of the fundamental signal of the transmitter and antenna combination shall not exceed 0.29 V/m mean or 1.28 V/m peak when measured at a distance of 3 meters.

(5) The requirements of § 90.175 regarding frequency coordination apply.

(Secs. 4(i) and 303(r), Communications Act of 1934, as amended, §§ 0.131 and 0.331 of the Commission's Rules and 5 U.S.C. 553 (b)(3)(B) and (d)(3); 47 U.S.C. 154(i) and 303)

[43 FR 54791, Nov. 22, 1978]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 90.25, see the List of CFR Sections Affected in the Finding Aids section of this volume.

Subpart C—Special Emergency Radio Service

§ 90.33 Scope.

The Special Emergency Radio Service (SERS) covers the licensing of the radio communications of the following categories of activities: medical services, rescue organizations, veterinarians, handicapped persons, disaster relief organizations, school buses, beach patrols, establishments in isolated places, communications standby facilities, and emergency repair of public communications facilities. Entities not meeting these eligibility criteria may also be licensed in the SERS solely to provide service to SERS eligibles on one-way paging-only frequencies below 800 MHz, *i.e.*, those frequencies with the assignment limitations appearing at § 90.53(b)(4) or (26). Private carrier systems licensed on other SERS channels prior to June 1, 1990, may continue to operate on those channels solely to provide radio communications service to SERS eligibles. Rules as to eligibility for licensing, permissible communications and classes and number of stations, and any special requirements as to each of these categories are set forth in the following sections. Frequencies available for these categories of services are shown in a separate frequency table.

[55 FR 24896, June 19, 1990]

§ 90.34 Public Safety National Plan.

The Commission has established a National Plan which specifies special policies and procedures governing the Public Safety Radio Services and the Special Emergency Radio Service. The National Plan is contained in the *Report and Order* in General Docket No. 87-112. The principal spectrum resource for the National Plan is the 821-824 MHz and the 866-869 MHz bands. The National plan establishes planning regions covering all parts of the United States, Puerto Rico, and the U.S. Virgin Islands. No assignments will be made in the 821-824 MHz and 866-869 MHz bands until a regional plan for the area has been accepted by the Commission.

[53 FR 1024, Jan. 15, 1988]

§ 90.35 Medical services.

(a) *Eligibility.* The following persons are eligible to hold authorization to operate radio stations for the delivery or rendition of medical services to the public and on a secondary basis, for transmission of messages related to the efficient administration of organizations and facilities engaged in medical services operations.

(1) Hospital establishments that offer services, facilities, and beds for use beyond 24 hours in rendering medical treatment.

(2) Institutions and organizations regularly engaged in providing medical services through clinics, public health facilities, and similar establishments.

(3) Ambulance companies regularly engaged in providing medical ambulance services.

(4) Rescue organizations for the limited purpose of participation in providing medical services.

(5) Associations comprised of two or more of the organizations eligible under paragraphs (a)(1), (2), (3), and (4) of this section, for the purpose of active participation in and direct operational control of the medical services communication activities of such organizations.

(6) Physicians, schools of medicine, oral surgeons, and associations of physicians or oral surgeons.

(7) Governmental entities and governmental agencies for their own medical activities.

(8) Governmental entities and governmental agencies for providing medical services communications to other eligible persons through direct participation in and direct operational control of the system, such as through central dispatch service.

(b) [Reserved]

[43 FR 54791, Nov. 22, 1978, as amended at 47 FR 19538, May 6, 1982; 48 FR 9272, Mar. 4, 1983; 48 FR 26620, June 9, 1983; 49 FR 36376, Sept. 17, 1984]

§ 90.37 Rescue organizations.

(a) *Eligibility.* Persons or organizations operating a rescue squad are eligible to hold authorizations to operate radio stations for transmission of messages pertaining to the safety of life or property and urgent messages necessary for the rendition of an efficient emergency rescue service.

(b) *Class and number of stations available.* Each rescue squad will normally be authorized to operate one base station, and a number of mobile units (excluding hand carried mobile units) not exceeding the number of vehicles actually used in emergency rescue operations. In addition, each rescue squad will be authorized to operate a number of hand carried mobile units not exceeding two such units for each radio equipped vehicle actually used in emergency rescue operations.

[43 FR 54791, Nov. 22, 1978; 45 FR 43418, June 27, 1980]

§ 90.38 Physically handicapped.

(a) *Eligibility.* (1) Any person having a hearing deficiency such that average hearing threshold levels are 90 dB above ANSI (American National Standards Institute) 1969 or ISO (International Standards Organization) 1964 levels and such other persons who submit medical certification of similar hearing deficiency.

(2) Any person having visual acuity corrected to no better than 20/200 in the better eye or having a field of vision of less than 20 degrees.

(3) Any person, who, through loss of limbs or motor function, is confined to a wheelchair, or is nonambulatory.

(4) Parents or guardians of persons under 18 years eligible under (1), (2), (3), or institutions devoted to the care or training of those persons.

(b) *Special eligibility showing.* The initial application from a person claiming eligibility under paragraph (a) shall be accompanied by a statement from a physician attesting to the condition of the applicant or the applicant's child (or ward in case of guardianship).

[46 FR 15276, Mar. 5, 1981]

§ 90.39 Veterinarians.

(a) *Eligibility.* A veterinarian, veterinary clinic, or a school of veterinary medicine is eligible to hold authorizations to operate radio stations for the transmission of messages pertaining to the care and treatment of animals.

(b) *Class and number of stations available.* Each licensee may be authorized to operate one base station and two mobile units. Additional base stations or mobile units will be authorized only on a showing of need.

§ 90.41 Disaster relief organizations.

(a) *Eligibility.* Organizations established for disaster relief purposes having an emergency radio communications plan are eligible to hold authorizations to operate radio stations for the transmission of communications relating to the safety of life or property, the establishment and maintenance of temporary relief facilities, and the alleviation of the emergency situation during periods of actual or impending emergency, or disaster, and until substantially normal conditions are restored.

(b) *Special eligibility showing.* The initial application from a disaster relief organization shall be accompanied by a copy of the charter or other authority under which the organization was established and a copy of its communications plan. The plan shall fully describe the operation of the radio facilities and describe the method of intergration into other communications facilities which normally would be available to assist in the alleviation of the emergency condition.

[43 FR 54791, Nov. 22, 1978, as amended at 48 FR 9272, Mar. 4, 1983]

§ 90.43 School buses.

(a) *Eligibility.* Persons or organizations operating school buses on a regular basis over regular routes are eligible to hold authorizations to operate radio stations for the transmission of messages pertaining to either the efficient operation of the school bus service or the safety or general welfare of the students they are engaged in transporting.

(b) *Class and number of stations available.* Each school bus operator may be authorized to operate one base station and a number of mobile units not in excess of the total of the number of buses and maintenance vehicles regularly engaged in the school bus operation. Additional base stations or mobile units will be authorized only in exceptional circumstances when the applicant can show a specific need.

§ 90.45 Beach Patrols.

(a) *Eligibility.* Persons or organizations operating beach patrols having responsibility for life-saving activities are eligible to hold authorizations to operate radio stations for the transmission of messages required for the safety of life or property.

[43 FR 54791, Nov. 22, 1978, as amended at 48 FR 9272, Mar. 4, 1983]

§ 90.47 Establishment in isolated areas.

(a) *Eligibility.* Persons or organizations maintaining establishment in isolated areas where public communications facilities are not available and where the use of radio is the only feasible means of establishing communication with a center of population, or other point from which emergency assistance might be obtained if needed, are eligible to hold authorizations to operate radio stations for the transmission of messages only during an actual or impending emergency endangering life, health or property for the transmission of essential communications arising from the emergency. The transmission of routine or non-emergency communications is strictly prohibited.

(b) *Special eligibility showing.* The initial application requesting a station
authorization for an establishment
an isolated area shall be accompani
by a statement describing the status
public communication facilities in t
area of the applicant's establishme
the results of any attempts the app
cant may have made to obtain pub
communication service, and; in t
event radio communications service
to be furnished under subparagr
(d)(2) of this section, a copy of t
agreement involved must be subm
ted.

(c) *Class and number of statio*
available. Persons or organizations
this category may be authorized to
erate not more than one fixed stati
at any isolated establishment and n
more than one fixed station in
center of population.

(d) *Communication service render*
and received. (1) The licensee of a s
tion at any establishment in an isol
ed area shall make the communicati
facilities of such station available
no charge to any person desiring t
transmission of any communicati
permitted by paragraph (a) of this se
tion.

(2) For the purpose of providing t
communications link desired the
censee of a station at an establishme
in an isolated area either may be t
licensee of a similar station at anoth
location or may obtain communicati
service under a mutual agreeme
from the licensee of any station in t
Public Safety or Special Emergen
Radio Services or any other stati
which is authorized to communica
with the special emergency fixed s
tion.

§ 90.49 Communications standby faciliti

(a) *Eligibility.* A communicatio
common carrier operating communic
tions circuits that normally carry e
sential communication of such
nature that their disruption would e
danger life or public property is eli
ble to hold authorizations for standb
radio facilities for the transmission o
messages only during periods whe
the normal circuits are inoperative d
to circumstances beyond the control o
the user. During such periods th
radio facilities may be used to tran

mit any communication which would be carried by the regular circuit.

(b) *Special eligibility showing.* Initial applications for authorization to operate a standby radio facility must include a statement describing radio communication facilities desired, the proposed method of operation, a description of the messages normally being carried, and an explanation of how their disruption will endanger life or public property.

[43 FR 54791, Nov. 22, 1978, as amended at 48 FR 9272, Mar. 4, 1983]

§ 90.51 Emergency repair of public communications facilities.

(a) *Eligibility.* Communications common carriers are eligible in this service for radio facilities to be used in effecting expeditious repairs to interruption of public communications facilities where such interruptions have resulted in disabling intercity circuits or service to a multiplicity of subscribers in a general area. Stations authorized under this section may be used only when no other means of communication is readily available, for the transmission of messages relating to the safety of life and property and messages which are necessary for the efficient restoration of the public communication facilities which have been disrupted.

[43 FR 54791, Nov. 22, 1978, as amended at 48 FR 9272, Mar. 4, 1983]

§ 90.53 Frequencies available.

(a) The following table indicates frequencies available for assignment to stations in the Special Emergency Radio Service, together with the class of station(s) to which they are normally assigned and the specific assignment limitations which are explained in paragraph (b) of this section. (Frequencies below 450 MHz indicated for base or mobile stations may be authorized to fixed stations on a secondary basis to stations in the mobile service):

Special Emergency Radio Service Frequency Table

Frequency or band	Class of station(s)	Limitations
Kilohertz:		
2000–3000	Fixed	1
2726	Base or mobile	2
3201	do	
Megahertz:		
33.02	do	3, 25
33.04	do	25
33.06	do	3, 25
33.08	do	25
33.10	do	3, 25
35.02	Mobile	27
35.64	Base	4
35.68	do	4
37.90	Base or mobile	3, 25
37.94	do	3, 25
37.98	do	3, 25
43.64	Base	4, 28
43.68	do	4
45.92	Base or mobile	25
45.96	do	25
46.00	do	25
46.04	do	25
47.42	do	5, 25
47.46	do	25
47.50	do	25
47.54	do	25
47.58	do	25
47.62	do	25
47.66	do	25
72.00 to 76.00	Operational fixed	6
150–170 MHz	Base or mobile	30
150.775	Mobile	7
150.790	do	7
152.0075	Base	4, 31
155.160	Base or mobile	25
155.175	do	25
155.205	do	25
155.220	do	25
155.235	do	25
155.265	do	25
155.280	do	25
155.295	do	25
155.325	do	9, 25, and 29
155.340	do	10, 29
155.355	do	9, 25, and 29
155.385	do	9, 25, and 29
155.400	do	9, 25, and 29
157.450	Base	4, 11
163.250	do	4
169–172	Mobile	33
450 to 470	Fixed	12
453.025	Base	26
453.075	do	26
453.125	do	26
453.175	do	26
458.025	Mobile	13, 14
458.075	do	13, 14
458.125	do	13, 14
458.175	do	13, 14
460.525	Base or mobile	17, 34
460.550	do	17, 34
462.950	do	16, 19, 25
462.975	do	16, 18, 25
463.000	do	14, 15, 19
463.025	do	14, 15, 19

Special Emergency Radio Service Frequency Table—Continued

Frequency or band	Class of station(s)	Limitations
463.050	do	14, 15, 19
463.075	do	14, 15, 20
463.100	do	14, 15, 20
463.125	do	14, 15, 20
463.150	do	14, 15, 20
463.175	do	14, 15, 20
465.525	Mobile	17, 34
465.550	do	17, 34
467.950	do	16, 18, 25
467.975	do	16, 18, 25
468.000	do	14, 15, 19
468.025	do	14, 15, 19
468.050	do	14, 15, 19
468.075	do	14, 15, 20
468.100	do	14, 15, 20
468.125	do	14, 15, 20
468.150	do	14, 15, 20
468.175	do	14, 15, 20
806 to 824	do	21
851 to 869	Base or mobile	21
928 and above	Operational-fixed	22
929 to 930	Base only	32
1427 to 1435	Operational-fixed, base or mobile.	23
2450 to 2500	Base or mobile	24
10,550 to 10,680*	do	

* The frequencies in the band 10.55–10.68 GHz are available for Digital Termination Systems and for associated internodal links in the Point-to-Point Microwave Radio Service. No new licenses will be issued under this subpart but current licenses will be renewed.

(b) Explanation of assignment limitations appearing in the frequency table of paragraph (a) of this section:

(1) Appropriate frequencies in the band 2000-3000 kHz which are designated in part 80 of this chapter as available to Public Ship Stations for telephone communications with Public Coast Stations may be assigned on a secondary basis to Special Emergency fixed stations for communication with Public Coast Stations only, provided such stations are located in the United States and the following conditions are met:

(i) That such fixed station is established pursuant to the eligibility provisions of § 90.47 and that the isolated area involved in an island or other location not more than 480 km (300 statute miles) removed from the desired point of communication and isolated from that point by water.

(ii) That evidence is submitted showing that an arrangement has been made with the coast station licensee for the handling of emergency communications permitted by § 80.453 and § 90.47(d) of this chapter.

(iii) That operation of the Speci Emergency fixed station shall at n time conflict with any provision o part 80 of this chapter and furthe that such operation in general sha conform to the practices employed b Public Ship Stations for radiotelephone communication with the sam Public Coast Station.

(2) This frequency is shared with th Local Government Radio Servic where it is available for State Guar operations.

(3) This frequency is shared with th Highway Maintenance Radio Service.

(4) This frequency will be assigne only for one-way paging communications to mobile receivers. Transmissions for the purpose of activating o controlling remote objects on this frequency are not authorized.

(5) This frequency is reserved for assignment only to national organizations eligible for disaster relief operation under § 90.41.

(6) The frequencies available for u at operational fixed stations in th band 72-76 MHz are listed i § 90.257(a)(1). These frequencies, a shared with other services and a available only in accordance with th provisions of § 90.257.

(7) This frequency may be authorized only for voice transmission from portable (hand-held unit) that is no airborne, to an ambulance or othe emergency vehicle for automatic r transmission (mobile repeater) on regular mobile frequency to a base station facility. Operation on this frequency is limited to 2.5 watts outpu power.

(8) [Reserved]

(9) This frequency is assignable onl to those hospitals described i § 90.35(a)(1) and to those ambulanc companies which need to communicate with a hospital authorized on th frequency, while providing an ambulance service.

(10) This frequency is authorized fo use under § 90.35(a) for the renditio and delivery of medical services, an may be designated by common consen as an inter-system mutual assistanc frequency under an area-wide medica communications plan.

(11) Operations on this frequency re limited to 30 watts transmitter utput power.

(12) The frequencies available for se at fixed stations in this band, and he requirements for assignment are et forth in § 90.261. Operation on hese frequencies is secondary to stations in the Industrial and Land-Transportation Radio Service where hey are assigned for land mobile oprations.

(13) This frequency is authorized for se under § 90.35(a) for telemetry or oice transmission with maximum ransmitter output power of 1 watt rom a portable telemetering unit to n ambulance for automatic retransnission (mobile repeater) to a hospital r other medical care facility. This freuency is also available in the Local Government Radio Service for highay radio call box operations. (See 90.17(b) and (c)(11).)

(14) The continuous carrier mode of peration may be used for telemetry ransmission on this frequency.

(15) For applications for new radio ystems received after August 15, 1974, he eight frequency pairs listed below will only be assigned in a block for hared operations under § 90.35(a) ubject to the following:

(i) For uniformity in usage, these frequency pairs may be referred to by hannel name as follows:

Frequencies base and mobile	Mobile only (megahertz)	Channel name
egahertz:		
463.000	468.000	MED-1
463.025	468.025	MED-2
463.050	468.050	MED-3
463.075	468.075	MED-4
463.100	468.100	MED-5
463.125	468.125	MED-6
463.150	468.150	MED-7
463.175	468.175	MED-8

(ii) Except as provided in paragraphs (b)(15)(v) and (vi) of this section, mobile or portable stations must employ equipment which is both wired and equipped to transmit/receive, respectively, on each of these eight frequency pairs with transmitters operated on the 468 MHz frequencies.

(iii) Applicants proposing to install base or control stations which are capable of transmitting/receiving on less than four (three, if bio-medical telemetry operation will not be employed in the system) of these eight channel pairs must submit with their application the results of a field study demonstrating that the frequency or frequencies applied for will cause the least amount of interference, among the eight channel pairs, to existing systems operating on the MED channels.

(iv) [Reserved]

(v) Portable (hand-held) units operated with a maximum output power of 2.5 watts are exempted from the multi-channel equipment requirements specified in paragraph (b)(15)(ii) in this section.

(vi) Stations located in areas above line A, as defined in § 90.7, will be required to meet multi-channel equipment requirements only for those frequencies up to the number specified in paragraph (b)(15)(ii) of this section which have been assigned and coordinated with Canada in accordance with the applicable U.S.-Canada agreement.

(16) This frequency is primarily authorized for use under § 90.35(a) in the dispatch of medical care vehicles and personnel for the rendition or delivery of medical services. This frequency may also be assigned for intra-system and inter-system mutual assistance purposes. For uniformity in usage, the frequency pairs 462.950/467.950 MHz and 462.975/467.975 MHz may be referred to as MED-9 and MED-10, respectively.

(17) This frequency is shared with the Police and Fire Radio Services and is subject to the coordination requirements specified in § 90.175.

(18) Until March 1, 1986, use of this frequency is on a secondary basis to Police Radio Service licenses authorized prior to April 16, 1976.

(19) This frequency is authorized for use under § 90.35(a) for operations in bio-medical telemetry stations. F1B, F1D, F2B, F2D, F3E, G1B, G1D, G2B, G2D, and G3E emissions may be authorized. This frequency may be utilized on a secondary basis for all other communications related to the delivery or rendition of medical services to the public consistent with § 90.35. Use of this frequency for administrative communications is not permitted.

(20) This frequency is authorized for use under § 90.35(a) for communications between medical facilities vehicles and personnel related to medical supervision and instruction for treatment and transport of patients in the rendition or delivery of medical services. F1B, F1D, F2B, F2D, G1B, G1D, G2B, G2D, F3E and G3E emissions are authorized. This frequency may be utilized on a secondary basis for all other communications related to the delivery or rendition of medical services to the public consistent with § 90.35. Use of this frequency for administrative communications is not permitted.

(21) Subpart S contains rules for assignment of frequencies in the 806-824 MHz and 851-869 MHz bands.

(22) Assignment of frequencies above 928 MHz for operational-fixed stations is governed by part 94 of this chapter.

(23) This frequency band is available in this service subject to the provisions of § 90.259.

(24) Available only on a shared basis with stations in other services, and subject to no protection from interference due to the operation of industrial, scientific, or medical (ISM) devices. In the 2483.5-2500 MHz band, no applications for new or modification to existing stations to increase the number of transmitters will be accepted. Existing licensees as of July 25, 1985, or on a subsequent date following as a result of submitting an application for license on or before July 25, 1985, are grandfathered and their operation is co-primary with the Radiodetermination Satellite Service.

(25) A licensee regularly conducting two-way communication operations on this frequency may, on a secondary basis, also transmit one-way alert-paging signals to ambulance and rescue squad personnel.

(26) This frequency is assignable only to persons eligible under § 90.35(a) for the transmission of one-way tone and/or voice paging messages that are necessary for the rendition of medical services. This frequency is also shared with highway radio call box systems first licensed prior to March 31, 1980, in the Local Government Radio Service in accordance with § 90.17(c)(11).

(27) This frequency is availab
this service only to persons eli
under the provisions of § 90.38(a
operation of transmitters havin
maximum power output of three
using A1A, A1D, A2B, A2D, F1B,
F2B, F2D, G1B, G1D, G2B, or
emission. This frequency is also
able in the Business Radio Servic
a co-equal basis with the Sp
Emergency Radio Service users.

(28) No new licenses will be gra
for one-way paging under § 90.487
use on this frequency after Augu
1980. This frequency is availabl
persons eligible for station lic
under the provisions of § 90.38(a)
co-equal basis with one-way pa
users under § 90.487 prior to Augu
1985, and on a primary basis
August 1, 1985. Only A1A, A1D,
A2D, F1B, F1D, F2B, F2D, G1B,
G2B, G2D emissions and power
exceeding 10 watts will be authori
Antennas having gain greater th
dBd will not be authorized. Trans
sions shall not exceed two second
ration.

(29) In addition to other authori
uses, the use of F1B, F1D, F2B,
F2D emission is permitted on this
quency for the operation of bio-m
cal telemetry systems subject to
following limitations:

(i) Bio-medical telemetry operati
may be conducted only in geograp
areas beyond fifty miles from the c
ters of the following urbanized area

New York, NY-Northeastern
Jersey; Los Angeles-Long Beach,
Chicago, IL-Northwestern India
Philadelphia, PA-NJ; Detroit,
San Francisco-Oakland, CA; Bos
MA; Washington, DC-MD-VA; Cl
land, OH; St. Louis, MO-IL; Pi
burgh, PA; Minneapolis-St. P
MN; Houston, TX; Baltimore,
Dallas, TX; Milwaukee, WI; Seat
Everett, WA; Miami, FL; San Di
CA; Atlanta, GA; Cincinnati,
KY; Kansas City, MO-KS; Buff
NY; Denver, CO; San Jose, CA;
Orleans, LA; Phoenix, AZ; Portla
OR-WA; Indianapolis, IN; Pro
dence-Pawtucket-Warwick, RI-
Columbus, OH; San Antonio,
Louisville, KY-IN; Dayton, OH;
Worth, TX; Norfolk-Portsmou

VA; Memphis, TN-MS; Sacramento, CA; Fort Lauderdale-Hollywood, FL; Rochester, NY; Tampa-St. Petersburg, FL.

(ii) The continuous carrier mode of operation may be used for telemetry transmissions on this frequency for periods up to two-minutes duration; following which there must be a break in the carrier for at least a one-minute period.

(iii) Geographical coordinates for the above-listed urbanized areas may be found at Table 1 of § 90.635.

(30) Rules concerning the use of this band for narrowband operations are set forth in § 90.271.

(31) This frequency is removed by 22.5 kHz from frequencies assigned to other radio services. Utilization of this frequency may result in, as well as be subject to, interference under certain operating conditions. In considering the use of this frequency, adjacent channel operations should be taken into consideration. If interference occurs, the licensee may be required to take the necessary steps to resolve the problem. See § 90.173(b).

(32) This frequency is assignable only to governmental entities eligible under § 90.35(a) for the dispatch of medical care vehicles and personnel for the rendition or delivery of emergency medical services. This frequency may be designated by common consent for intra-system and inter-system mutual assistance purposes.

(33) Frequencies in this band will be assigned for low power wireless microphones in accordance with the provisions of § 90.265.

(34) This frequency is assignable only to governmental entities eligible under § 90.35(a) for the dispatch of medical care vehicles and personnel for the rendition or delivery of emergency medical services. This frequency may be designated by common consent for intra-system and inter-system mutual assistance purposes.

(c) *Additional frequencies available.* In addition to the frequencies shown in the frequency table of this section, the following frequencies are available in this service. (See also § 90.253).

(1) Substitution of frequencies available below 25 MHz may be made in accordance with the provisions of § 90.263.

(2) [Reserved]

(3) Frequencies in the band 73.0-74.6 MHz may be assigned to stations authorized their use on or before December 1, 1961, but no new stations will be authorized in this band, nor will expansion of existing systems be permitted. (See also § 90.257.)

(4) The frequency bands 31.99 to 32.00 MHz, 33.00 to 33.01 MHz, 33.99 to 34.00 MHz, 37.93 to 38.00 MHz, 39.00 to 39.01 MHz, 39.99 to 40.00 MHz and 42.00 to 42.01 MHz are available for assignment for developmental operation subject to the provisions of subpart Q.

(5) Frequencies in the 421-430 MHz band are available in the Detroit, Cleveland, and Buffalo areas in accordance with the rules in §§ 90.273 through 90.281.

(d) *Limitation on number of frequencies assignable.* Normally only one frequency below 450 MHz will be assigned for mobile service operations by a single applicant in a given area. The assignment of an additional frequency will be made only upon a satisfactory showing of need, except that:

(1) Additional frequencies above 25 MHz may be assigned in connection with the operation of mobile repeaters in accordance with § 90.247, notwithstanding this limitation.

(2) An additional frequency may be assigned for paging operations from those frequencies available under § 90.53(b)(4).

(3) The frequency 155.340 MHz may be assigned as an additional frequency when it is designated as a mutual assistance frequency as provided in § 90.53(b)(10).

(4) Additional frequencies may be assigned for fixed station operations.

(5) Frequencies in the 25-50 MHz, 150-170 MHz, and 450-512 MHz bands, and the frequency bands 903-904 MHz, 904-912 MHz, 918-926 MHz, and 926-927 MHz may be assigned for the operation of Automatic Vehicle Monitoring (AVM) systems in accordance with § 90.239, notwithstanding this limitation.

(Secs. 4, 303, 307, 48 Stat., as amended, 1066, 1082, 1083; 47 U.S.C. 154, 303, 307; secs. 4(i) and 303(r), Communications Act of 1934, as amended, §§ 0.131 and 0.331 of the Commission's Rules and 5 U.S.C. 553 (b)(3)(B) and (d)(3); 47 U.S.C. 154(i) and 303)

[43 FR 54791, Nov. 22, 1978]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 90.53, see the List of CFR Sections Affected in the Finding Aids section of this volume.

§ 90.55 Paging operations.

Paging operations may be authorized in this service only on frequencies assigned under the provisions of § 90.53(b)(4), (25), (26), or (32). Paging operations on other frequencies authorized before August 15, 1974, may be continued only if they do not cause harmful interference to regular operations on the same frequencies. Such paging operations may be renewed indefinitely on a secondary basis to regular operations, except within 125 kilometers (75 mi.) of the following urbanized areas:

Urbanized area	North latitude	West longitude
New York, NY-Northeastern NJ	40–45–06	73–59–39
Los Angeles-Long Beach, CA	34–03–15	118–14–28
Chicago, IL	41–52–28	87–38–22
Philadelphia, PA-NJ	39–56–58	75–09–21
Detroit, MI	42–19–48	83–02–57
San Francisco-Oakland, CA	37–46–39	122–24–40
Boston, MA	42–21–24	71–03–25
Washington, DC-MD-VA	38–53–51	77–00–33
Cleveland, OH	41–29–51	81–41–50
St. Louis, MO-IL	38–37–45	90–12–22
Pittsburgh, PA	40–26–19	80–00–00
Minneapolis-St. Paul, MN	44–58–57	93–15–43
Houston, TX	29–45–26	95–21–37
Baltimore, MD	39–17–26	76–36–45
Dallas, TX	32–47–09	96–47–37
Milwaukee, WI	43–02–19	87–54–15
Seattle-Everett, WA	47–36–32	122–20–12
Miami, FL	25–46–37	80–11–32
San Diego, CA	32–42–53	117–09–21
Atlanta, GA	33–45–10	84–23–37
Cincinnati, OH-KY	39–06–07	84–30–35
Kansas City, MO-KS	39–04–56	94–35–20
Buffalo, NY	42–52–52	78–52–21
Denver, CO	39–44–58	104–59–22
San Jose, CA	37–20–16	121–53–24
Tampa-St. Petersburg, FL	27–51–48	82–33–11
Phoenix, AZ	33–41–10	111–31–15

[45 FR 13087, Feb. 26, 1980; 45 FR 43418, June 27, 1980, as amended at 50 FR 39678, Sept. 30, 1985; 50 FR 40976, Oct. 8, 1985]

Subpart D—Industrial Radio Services

§ 90.59 Scope.

The Industrial Radio Services include the Power, Petroleum, Forest Products, Motion Picture, Relay Press, Special Industrial, Business, Manufacturers, and Telephone Maintenance Radio Services. Rules as to eligibility for licensing, specific frequencies available, and any special requirements as to each of these radio services are set forth in the following sections.

§ 90.61 General eligibility.

(a) In addition to the eligibility shown in each Industrial Radio Service, eligibility is also provided for any corporation proposing to furnish nonprofit radiocommunication service to its parent corporation, to another subsidiary of the same parent, or to its own subsidiary provided the party served is regularly engaged in any of the eligibility activities set forth in the particular service involved. This corporate eligibility is not subject to the cooperative use provisions of § 90.179.

(b) Eligibility is also provided for a nonprofit corporation or association that is organized for the purpose of furnishing a radio communications service to persons actually engaged in any of the eligibility activities set forth in the particular service involved. Such use is subject to the cooperative use provisions of § 90.179.

[47 FR 19533, May 6, 1982]

§ 90.63 Power Radio Service.

(a) *Eligibility.* Persons primarily engaged in any of the following activities are eligible to hold authorizations in the Power Radio Service to operate radio stations for transmission of communications essential to such activities of the licensee:

(1) The generation, transmission, or distribution of electrical energy for use by the general public or by the members of a cooperative organization.

(2) The distribution of manufactured or natural gas by means of pipeline, for use by the general public or by the members of a cooperative organization, or, in a combination of that

vity with the production, transmis-
or storage of manufactured or
ral gas preparatory to such distri-
on.

) The distribution of steam by
ns of pipeline or, of water by
ns of pipeline, canal, or open
h, for use by the general public or
he members of a cooperative orga-
tion, or in a combination of that
vity with the collection, transmis-
, storage, or purification of water
he generation of steam preparato-
o such distribution.

) The providing of a supporting
ice by a corporation directly relat-
to activities of its parent corpora-
, of another subsidiary of the same
ent, or of its own subsidiary, where
party served is regularly engaged
any of the eligibility activities set
h in this section.

) *Special use of service.* (1) Radio
ilities licensed to an electric power
ity, in addition to being used pri-
rily for the installation and mainte-
ce of the electric power system,
y also be used for the installation
maintenance of any other wireline
ilities where such facilities employ
whole or in part the same pole line
duct distribution system as that of
electric power entity and where
licensee has the responsibility to
intain such additional wireline fa-
ties through common ownership or
tractual arrangement.

2) Persons licensed under the provi-
ns of paragraph (a)(2) of this sec-
n may utilize their radio facilities in
junction with the supplying of liq-
fied petroleum gas to consumers in
eas beyond gas distribution pipe-
es.

c) *Frequencies available.* The fol-
ving table indicates frequencies
ailable for assignment to stations in
e Power Radio Service, together
th the class of station(s) to which
ey are normally assigned and the
ecific assignment limitations which
e explained in paragraph (d) of this
ction:

Power Radio Service Frequency Table

Frequency or band	Class of station(s)	Limitations
Kilohertz:		
2000 to 25,000	Fixed, base or mobile.	1
2292	Base or mobile	1
2398	do	1
4637.5	do	1
Megahertz:		
37.46	do	
37.48	do	
37.50	do	
37.52	do	
37.54	do	
37.56	do	
37.58	do	
37.60	Base, mobile or operational fixed.	2
37.62	Base or mobile	
37.64	do	
37.66	do	
37.68	do	
37.70	do	
37.72	do	
37.74	do	
37.76	do	
37.78	do	
37.80	do	
37.82	do	
37.84	Operational fixed, base or mobile.	2
37.86	Base or mobile	
47.70	do	
47.72	do	
47.74	do	
47.76	do	
47.78	do	
47.80	do	
47.82	do	
47.84	do	
47.86	do	
47.88	do	
47.90	do	
47.92	do	
47.94	do	
47.96	do	
47.98	do	
48.00	do	
48.02	do	
48.04	do	
48.06	do	
48.08	do	
48.10	do	
48.12	do	
48.14	do	
48.16	do	
48.18	do	
48.20	do	
48.22	do	
48.24	do	
48.26	do	
48.28	do	
48.30	do	
48.32	do	
48.34	do	
48.36	do	
48.38	do	
48.40	do	
48.42	do	
48.44	do	
48.46	do	
48.48	do	

Power Radio Service Frequency Table—
Continued

Frequency or band	Class of station(s)	Limitations
48.50	......do	
48.52	......do	
48.54	......do	
72.00 to 76.00	Operational fixed	3
150–170	Base or mobile	24
153.410	......do	
153.425	......do	4
153.440	......do	5
153.455	......do	4
153.470	......do	
153.485	......do	4
153.500	......do	5
153.515	......do	4
153.530	......do	
153.545	......do	4
153.560	......do	5
153.575	......do	4
153.590	......do	
153.605	......do	4
153.620	......do	5
153.635	......do	4
153.650	......do	
153.665	......do	4
153.680	......do	5
153.695	......do	
153.710	......do	
153.725	......do	
154.45625	Fixed or mobile	7, 21, 22, 23
154.46375	......do	6, 7, 21
154.47125	......do	7, 11, 21, 22
154.47875	......do	7, 21, 22, 23
158.130	Base or mobile	
158.145	......do	8
158.160	......do	9
158.175	......do	8
158.190	......do	
158.205	......do	8
158.220	......do	9
158.235	......do	8
158.250	......do	
158.265	......do	8
169–172	Mobile, operational fixed.	10
173.20375	Fixed or mobile	7, 11, 21, 22
173.2100	......do	11, 12, 21, 22
173.2375	......do	7, 21, 22, 23
173.250	Base or mobile	9
173.2625	Fixed or mobile	7, 21, 22, 23
173.2875	......do	7, 21, 22, 23
173.300	Base or mobile	9
173.3125	Fixed or mobile	7, 21, 22, 23
173.3375	......do	7, 21, 22, 23
173.350	Base or mobile	9
173.3625	Fixed or mobile	7, 21, 22, 23
173.3900	......do	11, 12, 21, 22
173.39625	......do	7, 11, 21, 22
216–220	Base and Mobile	13
406–413	Operational fixed	10
450–470	Fixed	14
451.025	Base or mobile	
451.050	......do	
451.075	......do	
451.100	......do	
451.125	......do	
451.150	......do	
451.175	......do	15
451.200	......do	
451.225	......do	15
451.250	......do	

Power Radio Service Frequency Table—
Continued

Frequency or band	Class of station(s)	Limitations
451.275	......do	
451.375	......do	
451.425	......do	
451.475	......do	
451.525	......do	
451.575	......do	
451.625	......do	
451.675	......do	
456.025	Mobile	
456.050	......do	
456.075	......do	
456.100	......do	
456.125	......do	
456.150	......do	
456.175	......do	
456.200	......do	
456.225	......do	
456.250	......do	
456.275	......do	
456.375	......do	
456.425	......do	
456.475	......do	
456.525	......do	
456.575	......do	
456.625	......do	
456.675	......do	
462.475	Base or mobile	
462.525	......do	
467.475	Mobile	
467.525	......do	
470 to 512	Base or mobile	
806 to 821	Mobile	
851 to 866	Base or mobile	
896 to 901	Mobile	
928 and above	Operational-fixed	
929 to 930	Base only	
935 to 940	Base or mobile	
1427 to 1435	Operational-fixed, base or mobile.	
2450 to 2500	Base or mobile	
8400 to 8500	......do	
10,550 to 10,680*	......do	

* The frequencies in the band 10.55–10.68 GHz are available for Digital Termination Systems and for associated internodal links in the Point-to-Point Microwave Radio Service. No new licenses will be issued under this subpart but current licenses will be renewed.

(d) Explanation of assignment limitations appearing in the frequency tabulation of paragraph (c) of this section:

(1) Only utilities and power pools engaged in the distribution of electric power, or the distribution of by pipeline of fuels or water are eligible to use this spectrum, and then only in accordance with § 90.266. Except as provided in this part, licensees may not use these frequencies in the place of other operational circuits permitted by the Commission's Rules. Circuits operating on these frequencies may be used only for the following purposes:

Providing backup standby com-
ications for circuits which have
disrupted and which are used for
dinating inter-utility, intra-utility,
power pool distribution of electric
er; or,

) Coordinating the repair of inter-
ty, intra-utility, and power pool
tric power distribution networks,
he repair of pipelines.

) This frequency may be assigned
to stations operating in an inter-
nected or coordinated utility
em in accordance with an oper-
nal communications plan which
forth all points of communica-
s. Authorizations at variance with
established operational communi-
ons plan will be made only on a
ondary basis.

) The frequencies available for use
operational fixed stations in the
d 72-76 MHz are listed in
.257(a)(1). These frequencies are
red with other services and are
ilable only in accordance with the
visions of § 90.257.

) This frequency is shared with the
rest Products and Petroleum Radio
vices in the States of Arkansas,
isiana, Oklahoma, and Texas.

) This frequency is not available
assignment in this service in the
tes of Arkansas, Louisiana, Oklaho-
, and Texas. In these States, this
quency is available to the Petrole-
and Forest Products Radio Serv-
s.

6) This frequency is available for as-
nment to multiple address fixed sta-
ns employing omnidirectional an-
nas used for Power Utility peak
d shaving and shedding and to
bile stations used for the remote
ntrol of objects and devices. The
ximum power that may be author-
d to fixed stations is 300 watts
tput, and the maximum power that
ay be authorized for mobile stations
1 watt output. This frequency may
o be assigned to operational fixed
ations employing directional anten-
systems (front-to-back ratio of 20
) when such stations are located at
ast 120 km. (75 mi.) from the bound-
ies of any urbanized area of 200,000
more population. (U.S Census of
opulation, 1960). The maximum
ower output of the transmitter for such fixed stations may not exceed 50 watts. A1A, A1D, A2B, A2D, F1B, F1D, F2B, F2D, G1B, G1D, G2B, or G2D emission may be authorized.

(7) For FM transmitters the sum of the highest modulating frequency and the amount of frequency deviation may not exceed 2.8 kHz and the maximum frequency deviation may not exceed 2.5 kHz. For AM transmitters the highest modulating frequency may not exceed 2.0 kHz. The carrier frequency must be maintained within 0.0005 percent, and the authorized bandwidth may not exceed 6 kHz.

(8) This frequency is shared with Forest Products and Petroleum Radio Services in the States of Arkansas, Louisiana, Oklahoma, Oregon, Texas, and Washington.

(9) This frequency is not available for assignment in this service in the States of Arkansas, Louisiana, Oklahoma, Oregon, Texas, and Washington. In these States this frequency is available only in the Petroleum and Forest Products Radio Services.

(10) Frequencies in this band will be assigned only for transmitting hydrological or meteorological data or for low power wireless microphones in accordance with the provisions of § 90.265.

(11) The maximum output power of the transmitter may not exceed 50 watts for fixed stations and 1 watt for mobiles. A1A, A1D, A2B, A2D, F1B, F1D, F2B, F2D, G1B, G1D, G2B, or G2D emission may be authorized.

(12) For FM transmitters the sum of the highest modulating frequency and the amount of frequency deviation may not exceed 1.7 kHz and the maximum deviation may not exceed 1.2 kHz. For AM transmitters the highest modulating frequency may not exceed 1.2 kHz. The carrier frequency must be maintained within 0.0005 percent and the authorized bandwidth may not exceed 3 kHz.

(13) This band is available to stations operating in this service subject to the provisions of § 90.259.

(14) The frequencies available for use at fixed stations in this band, and the requirements for assignment are set forth in § 90.261. Operation on these frequencies is secondary to stations in the Public Safety and Land

Transportation Radio Services where they are assigned for land mobile operations.

(15) This frequency is available on a shared basis in the Power, Petroleum, Forest Products, Manufacturers, and Telephone Maintenance Radio Services. It may be assigned only when all of the frequencies in the 450-470 MHz band allocated to the service in which the applicant is primarily eligible are assigned within 56 km. (35 mi) of the proposed base station.

(16) Subpart L contains rules for assignment of frequencies in the 470-512 MHz band.

(17) Subpart S contains rules for assignment of frequencies in the 806-821/851-866 and 896-901/935-940 MHz bands.

(18) Assignment of frequencies above 928 MHz for operational-fixed stations is governed by Part 94 of this chapter.

(19) Available only on a shared basis with stations in other services, and subject to no protection from interference due to the operation of industrial, scientific, or medical (ISM) devices. In the 2483.5-2500 MHz band, no applications for new or modification to existing stations to increase the number of transmitters will be accepted. Existing licensees as of July 25, 1985, or on a subsequent date following as a result of submitting an application for license on or before July 25, 1985, are grandfathered and their operation is co-primary with the Radiodetermination Satellite Service.

(20) Use of frequencies in this band is limited to developmental operation and is subject to the provisions of Subpart Q.

(21) This frequency is available on a shared basis with the Local Government, Petroleum, Forest Products, Special Industrial, Business and Manufacturers Radio Services for remote control and telemetry operations.

(22) Operational fixed stations must employ directional antennas having a front-to-back ratio of at least 20 dB. Omnidirectional antennas having unity gain may be employed for stations communicating with at least three receiving locations separated by 160° of azimuth.

(23) The maximum effective radiated power (ERP) may not exceed 20 watts for fixed stations and 2 watts for mobile stations. The height of the antenna system may not exceed 15.2 meters (50 ft.) above the ground. All such operation is on a secondary basis to adjacent channel land mobile operations.

(24) Rules concerning the use of this band of narrowband operations are set forth in § 90.271.

(25) Frequencies in this band are available only for one-way paging operations in accordance with § 90.494.

(e) *Additional frequencies available.* In addition to the frequencies shown in the frequency table of this section, the following frequencies are available in this service. (See also § 90.253.)

(1) Frequencies may be substituted for those available below 25 MHz in accordance with the provisions of § 90.263.

(2) [Reserved]

(3) Frequencies in the band 73.0-74.6 MHz may be assigned to stations authorized their use on or before December 1, 1961, but no new stations will be authorized in this band, nor will expansion of existing systems be permitted. (See also § 90.257.)

(4) Persons eligible under the provisions of paragraph (a)(2) of this section who are engaged in the distribution of natural gas directly to consumers and who have a substantial requirement for mobile service communication with a gas supplier may be authorized to operate on the Petroleum Radio Service frequency or frequencies assigned to the supplier. However, such operation shall be limited to communications in a local area common to both parties, and shall relate only to gas supply and distribution activities. The application of any person seeking a frequency assignment under the provisions of this paragraph shall be accompanied by a written statement from the natural gas supplier which concurs in the need for such intercommunication and consents to the use by the natural gas distributor of the frequency or frequencies involved.

(5) Frequencies in the 421-430 MHz band are available in the Detroit, Cleveland, and Buffalo areas in ac-

nce with the rules in §§ 90.273
gh 90.281.
Limitation on number of frequen-
ssignable. Normally only one fre-
cy, or pair of frequencies in the
d frequency mode of operation,
e assigned for mobile service op-
ons by a single applicant in a
area. The assignment of an addi-
l frequency or pair of frequencies
e made only upon a satisfactory
ing of need, except that:
Additional frequencies above 25
may be assigned in connection
operation of mobile repeaters in
rdance with § 90.247 notwith-
ding this limitation.
Frequencies in the ranges 30.56-
MHz, 35.00-35.01 MHz, 35.99-
MHz, and 37.00-37.01 MHz are
lable for developmental operation
pplicants in this service subject to
provisions of Subpart Q, notwith-
ding this limitation.
) Frequencies in the 25-50 MHz,
170 MHz, and 450-512 MHz bands,
the frequency bands 903-904 MHz,
-912 MHz, 918-926 MHz, and 926-
MHz may be assigned for the oper-
n of Automatic Vehicle Monitoring
M) systems in accordance with
.239, notwithstanding this limita-
.
) The frequencies 10-490 kHz are
d to operate electric utility Power
e Carrier (PLC) systems on power
nsmission lines for communications
ential to the reliability and security
electric service to the public, in ac-
dance with Part 15 of this chapter.
y electric utility fulfilling require-
nts in paragraph (a)(1) of this sec-
n may operate PLC systems and
all supply to a Federal Communica-
ns Commission/National Telecom-
inications and Information Adminis-
tion recognized industry-operated
tity, information on all existing,
anges to existing, and proposed sys-
ms for inclusion in a data base. Such
formation shall include the frequen-
, power, location of transmitter(s),
cation of receivers and other techni-
l and operational parameters, which
ould characterize the system's poten-
al both to interfere with authorized
dio users, and to receive harmful in-
rference from these users. In an
greed upon format, the industry-operated entity shall inform the National Telecommunications and Information Administration and the Commission of these system characteristics prior to implementation of any proposed PLC system and shall provide monthly or periodic lists with supplements of PLC systems. The Federal Communications Commission and National Telecommunications and Information Administration will supply appropriate application and licensing information to the notification activity regarding authorized radio stations operating in the band. PLC systems in this band operate on a noninterference basis to radio systems assigned frequencies by the NTIA or licensed by the FCC and are not protected from interference due to these radio operations.

(Secs. 4(i) and 303(r), Communications Act of 1934, as amended, §§ 0.131 and 0.331 of the Commission's Rules and 5 U.S.C. 553 (b)(3)(B) and (d)(3); 47 U.S.C. 154(i) and 303)

[43 FR 54791, Nov. 22, 1978]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 90.63, see the List of CFR Sections Affected in the Finding Aids section of this volume.

§ 90.65 Petroleum Radio Service.

(a) *Eligibility.* Persons primarily engaged in prospecting for, producing, collecting, refining, or transporting by means of pipeline, petroleum or petroleum products (including natural gas) are eligible to hold authorizations in the Petroleum Radio Service to operate radio stations for transmissions of communications essential to such activities of the licensee: However, persons engaged solely in the containment or cleanup of oil spills will only be assigned those frequencies designated by limitations (6) or (9) in this section.

(b) *Frequencies available.* The following table indicates frequencies available for assignment to stations in the Petroleum Radio Service, together with the class of station(s) to which they are normally assigned and the specific assignment limitations which are explained in paragraph (c) of this section:

Petroleum Radio Service Frequency Table

Frequency or band	Class of station(s)	Limitations
Kilohertz:		
1614	Base or mobile	1,2,3,4
1628	do	1,2,3,4
1652	do	1,2,3,4
1676	do	1,2,3,4
1700	do	1,2,3,4
2000 to 25,000	Fixed, base or mobile.	1
2292	Base or mobile	1,2,4,5
2398	do	1,2,4,5
4637.5	do	1,2,4,5
Megahertz:		
25.02	do	3, 4
25.04	do	6
25.06	do	3, 4
25.08	do	6, 7
25.10	do	3, 4, 7
25.12	do	
25.14	do	3, 4
25.16	do	
25.18	do	3, 4
25.20	do	
25.22	do	4, 5
25.24	do	
25.26	do	4, 5
25.28	do	
25.30	do	4, 5
25.32	do	
30.66	do	4, 5, 8
30.70	do	4, 5
30.74	do	4, 5, 8
30.78	do	4, 5
30.82	do	4, 5, 8
31.32	do	37
31.40	do	37
31.44	do	37
31.48	do	37
31.52	do	37
31.60	do	37
31.64	do	37
31.72	do	37
31.76	do	37
33.18	do	
33.20	do	
33.22	do	
33.24	do	
33.26	do	
33.28	do	
33.30	do	
33.32	do	
33.34	do	
33.36	do	
33.38	do	
35.48	do	37
36.25	do	9
41.71	do	9
48.56	do	10
48.58	do	10
48.60	do	10
48.62	do	10
48.64	do	10
48.66	do	10
48.68	do	10
48.70	do	10
48.72	do	10
48.74	do	10
48.76	do	10
48.78	do	10
48.80	do	10
48.82	do	10

Petroleum Radio Service Frequency Ta
Continued

Frequency or band	Class of station(s)	Lim
48.84	do	
48.86	do	
48.88	do	
48.90	do	
48.92	do	
48.94	do	
48.96	do	
48.98	do	
49.00	do	
49.02	do	
49.04	do	
49.06	do	
49.08	do	
49.10	do	
49.12	do	
49.14	do	
49.16	do	
49.18	do	
49.20	do	
49.22	do	
49.24	do	
49.26	do	
49.28	do	
49.30	do	
49.32	do	
49.34	do	
49.36	do	
49.38	do	
49.40	do	
49.42	do	
49.44	do	
49.46	do	
49.48	do	
49.50	do	
72.00 to 76.00	Operational fixed	
150–170	Base or mobile	
150.980	do	
153.035	do	
153.050	do	4, 5, 13, 1
153.065	do	
153.080	do	4,
153.095	do	
153.110	do	4,
153.125	do	13,
153.140	do	4,
153.155	do	
153.170	do	4,
153.185	do	
153.200	do	4,
153.215	do	
153.230	do	4,
153.245	do	
153.260	do	4,
153.275	do	
153.290	do	4,
153.305	do	
153.320	do	4,
153.335	do	
153.350	do	4, 5,
153.365	do	
153.380	do	
153.395	do	
153.425	do	
153.440	do	
153.455	do	
153.485	do	
153.500	do	
153.515	do	
153.545	do	

Petroleum Radio Service Frequency Table—Continued

Frequency or band	Class of station(s)	Limitations
153.560	do	10, 15
153.575	do	14
153.605	do	14
153.620	do	10, 15
153.635	do	14
153.665	do	14
153.680	do	10, 15
154.45625	Fixed or mobile	16, 18, 24, 34
154.46375	do	16, 18, 24, 35, 36
154.47125	do	16, 18, 24, 35
154.47875	do	16, 18, 24, 34
154.585	Mobile	6, 19
158.145	Base or mobile	20
158.160	do	10, 21
158.175	do	20
158.205	do	20
158.220	do	10, 21
158.235	do	20
158.265	do	20
158.280	do	13
158.295	do	13
158.310	do	4, 5, 13
158.325	do	13, 38, 40
158.355	do	10, 39
158.370	do	4, 5, 10
158.415	do	13, 38, 40
158.430	do	4, 5, 13
158.445	Mobile	6, 22
159.480	Base or mobile	6
169.172	Mobile, operational fixed.	23
173.20375	Fixed or mobile	16, 18, 24, 35
173.2100	do	16, 24, 25, 35
173.2375	do	16, 18, 24, 34
173.250	Base or mobile	10, 21
173.2625	Fixed or mobile	16, 18, 24, 34
173.2875	do	16, 18, 24, 34
173.300	Base or mobile	10, 21
173.3125	Fixed or mobile	16, 18, 24, 34
173.3375	do	16, 18, 24, 34
173.350	Base or mobile	10, 21
173.3625	Fixed or mobile	16, 18, 24, 34
173.3900	do	16, 24, 25, 35
173.39625	do	16, 18, 24, 35
216–220	Base or mobile	26
406–413	Operational fixed	23
450–470	Fixed	27
451.175	Base or mobile	28
451.225	do	28
451.275	do	28
451.375	do	28
451.425	do	28
451.475	do	28
451.525	do	28
451.550	do	4, 5, 10
451.575	do	28
451.600	do	4, 5, 10
451.625	do	28
451.650	do	4, 5, 10
451.675	do	28
451.700	do	4, 5, 10
451.750	do	4, 5, 10
454.000	do	6
456.175	Mobile	28
456.225	do	28
456.275	do	28
456.375	do	28
456.425	do	28

Petroleum Radio Service Frequency Table—Continued

Frequency or band	Class of station(s)	Limitations
456.475	do	28
456.525	do	28
456.550	do	10
456.575	do	28
456.600	do	10
456.625	do	28
456.650	do	10
456.675	do	28
456.700	do	10
456.750	do	10
459.000	Base or mobile	6
462.475	do	28
462.525	do	28
467.475	Mobile	28
467.525	do	28
470 to 512	Base or mobile	29
806 to 821	Mobile only	30
851 to 866	Base or mobile	30
896 to 901	Mobile	30
928 and above	Operational-fixed	31
929 to 930	Base only	42
935 to 940	Base or mobile	30
1427 to 1435	Operational-fixed, base or mobile.	28
2450 to 2500	Base or mobile	32
8400 to 8500	do	33
10,550 to 10,680*	do	

* The frequencies in the band 10.55–10.68 GHz are available for Digital Termination Systems and for associated internodal links in the Point-to-Point Microwave Radio Service. No new licenses will be issued under this subpart but current licenses will be renewed.

(c) Explanation of assignment limitations appearing in the frequency table of paragraph (b) of this section:

(1) Only entities engaged in prospecting for petroleum, natural gas or petroleum products are eligible to use this spectrum, and then only in accordance with § 90.266. Except as provided in this part, licensees may not use these frequencies in the place of other operational circuits permitted by the Commission's Rules. Circuits operating on these frequencies may be used only for the following purposes:

(i) Providing standby backup communications for circuits which have been disrupted and which directly affect the safety of life, property, or the national interest; or,

(ii) Providing operational circuits during exploration.

(2) Use of this frequency is limited to an amplitude modulation mode of operation.

(3) This frequency is available for assignment only to stations utilized for geophysical purposes.

(4) Geophysical operations may use tone or impulse signaling for purposes other than indicating failure of equipment or abnormal conditions on this frequency. All such tone or impulse signaling shall be on a secondary basis and subject to the following limitations:

(i) Maximum duration of a single nonvoice transmission, may not exceed 3 minutes.

(ii) The bandwidth utilized for secondary tone or impulse signaling shall not exceed that authorized to the licensee for voice emission on the frequency concerned.

(iii) Frequency loading resulting from the use of secondary tone or impulse signaling will not be considered in whole or in part, as a justification for authorizing additional frequencies in the licensee's mobile service system.

(iv) The maximum transmitter output power for tone or impulse transmissions shall not exceed 50 watts.

(5) This frequency is available for assignment to geophysical stations on a secondary basis to other petroleum licensees. Geophysical stations must cease operations on this frequency immediately upon receiving notice that interference is being caused to mobile service stations.

(6) This frequency is primarily available for oil spill containment and cleanup operations and for training and drills essential in the preparations for the containment and cleanup of oil spills. It is secondarily available for general base-mobile operations in the Petroleum Radio Service on a noninterference basis. Secondary users of this frequency are required to forego its use should oil spill containment and cleanup activities be present in their area of operation or upon notice by the Commission or a primary user that harmful interference is being caused to oil spill containment or cleanup activities in other areas.

(7) Operation on this frequency is secondary to stations in the maritime mobile service operating in accordance with the International table of frequency allocations.

(8) This frequency is shared with the Motor Carrier Radio Service.

(9) This Government frequen
available for shared Government,
Government use by stations en
in oil spill containment and cle
operations and for training and
essential in the preparation for
tainment and cleanup of oil
Such use will be confined to
and coastal waterways.

(10) This frequency is shared
the Forest Products Radio Servic

(11) The frequencies availabl
use at operational fixed stations
band 72-76 MHz are liste
§ 90.257(a)(1). These frequencie
shared with other services an
available only in accordance wit
provisions of § 90.257. Seismic te
try transmitters type accepted
watt or less power and a frequen
erance not exceeding ±0.005% m
used as temporary operational
stations.

(12) This frequency is shared
the Special Industrial Radio Serv

(13) This frequency is shared
the Forest Products and Manuf
ers Radio Services.

(14) This frequency is shared
Power and Forest Products
Services and is available in this
only in the States of Arkansas,
ana, Oklahoma, and Texas. Else
this frequency is available i
Power Radio Service.

(15) This frequency is availab
assignment in this service only
States of Arkansas, Louisiana, O
ma, and Texas. Elsewhere th
quency is available in the Power
Service.

(16) Operational fixed station
employ directional antennas ha
front-to-back ratio of at least
Omnidirectional antennas
unity gain may be employed f
tions communicating with at
three receiving locations separa
160° of azimuth.

(17) [Reserved]

(18) For FM transmitters the
the highest modulating frequen
the amount of frequency de
may not exceed 2.8 kHz and the
mum deviation may not exce
kHz. For AM transmitters the h
modulating frequency may not
2 kHz. The carrier frequency m
maintained within 0.0005 perc

the center of the frequency band, and the authorized bandwidth may not exceed 6 kHz.

(19) This frequency is limited to a maximum power of 20 watts.

(20) This frequency is shared with Power and Forest Products Radio Services and is available in this service only in the States of Arkansas, Louisiana, Oklahoma, Oregon, Texas, and Washington. Elsewhere, this frequency is available only in the Power Radio Service.

(21) This frequency is available for assignment in this service only in the States of Arkansas, Louisiana, Oklahoma, Oregon, Texas, and Washington. Elsewhere, it is available in the Power Radio Service.

(22) This frequency is limited to a maximum output power of 75 watts.

(23) Frequencies in this band will be assigned only for transmitting hydrological or meteorological data or for low power wireless microphones in accordance with the provisions of § 90.265.

(24) This frequency band is shared with Power, Forest Products, Special Industrial, Petroleum, Manufacturers, Business, and Local Government Radio Service's for remote control and telemetry operations.

(25) For FM transmitters the sum of the highest modulating frequency and the amount of frequency deviation may not exceed 1.7 kHz and the maximum deviation may not exceed 1.2 kHz. For AM transmitters the highest modulating frequency may not exceed 1.2 kHz. The carrier frequency must be maintained within 0.0005 percent, and the authorized bandwidth may not exceed 3 kHz.

(26) This band is available to stations operating in this service subject to the provisions of § 90.259.

(27) The frequencies available for use at fixed stations in this band, and the requirements for assignment are set forth in § 90.261. Operation on these frequencies is secondary to stations in the Public Safety and Land Transportation Radio Services where they are assigned for land mobile operations.

(28) This frequency is available on a shared basis in the Power, Petroleum, Forest Products, Manufacturers, and Telephone Maintenance Radio Services. It may be assigned only when all of the frequencies in the 450-470 MHz band allocated to the service in which the applicant is primarily eligible are assigned within 56 km. (35 mi.) of the proposed base station.

(29) Subpart L contains rules for assignment of frequencies in the 470-512 MHz band.

(30) Subpart S contains rules for assignment of frequencies in the 806-821/851-866 and 896-901/935-940 MHz bands.

(31) Assignment of frequencies above 928 MHz for operational-fixed stations is governed by Part 94 of this chapter.

(32) Available only on a shared basis with stations in other services, and subject to no protection from interference due to the operation of industrial, scientific, or medical (ISM) devices. In the 2483.5-2500 MHz band, no applications for new or modification to existing stations to increase the number of transmitters will be accepted. Existing licensees as of July 25, 1985, or on a subsequent date following as a result of submitting an application for license on or before July 25, 1985, are grandfathered and their operation is co-primary with the Radiodetermination Satellite Service.

(33) Use of this frequency band is limited to developmental operation and is subject to the provisions of Subpart Q.

(34) The maximum effective radiated power (ERP) may not exceed 20 watts for fixed stations and 2 watts for mobile stations. The height of the antenna system may not exceed 15.24 meters (50 feet) above ground. All such operation is on a secondary basis to adjacent channel land mobile operations.

(35) The maximum output power of the transmitter may not exceed 50 watts for fixed stations and 1 watt for mobile stations. A1A, A1D, A2B, A2D, F1B, F1D, F2B, F2D, G1B, G1D, G2B, or G2D emission may be authorized.

(36) Use of this frequency is limited to stations located at least 120.7 km. (75 miles) from the center of an urbanized areas of 200,000 or more population (U.S. Census of Population, 1970). Operation is on a secondary

basis to that in the Power Radio Service.

(37) This frequency is shared with the Special Industrial Radio Service and is available for assignment in the Petroleum Radio Service only in the states of Texas and Louisiana within 75 miles of the Gulf of Mexico and in adjacent offshore waters. Mobile relay stations will not be authorized.

(38) This frequency is shared with the Special Industrial Radio Service in the States of North Dakota; South Dakota; Iowa; Nebraska; Kansas and Missouri beyond 50 miles from St. Louis and Kansas City; Colorado and Wyoming east of Longitude 106 degrees; and Minnesota south of Latitude 47 degrees.

(39) This frequency is shared with the Special Industrial Radio Service in the States of North Dakota; Iowa; Nebraska; Kansas; Missouri; Colorado and Wyoming east of Longitude 106 degrees; and Minnesota south of Latitude 47 degrees.

(40) This frequency may not be shared in the Special Industrial Radio Service within 20 miles of the cities of Duluth, Minnesota; Des Moines and Davenport, Iowa; Omaha, Nebraska; Colorado Springs, Colorado; and Wichita, Kansas.

(41) Rules concerning the use of this band for narrowband operations are set forth in § 90.271.

(42) Frequencies in this band are available only for one-way paging operations in accordance with § 90.494.

(d) *Additional frequencies available.* In addition to the frequencies shown in the frequency table of this section, the following frequencies are available in this service. (See also § 90.253.)

(1) Frequencies may be substituted for those available below 25 MHz in accordance with the provisions of § 90.263.

(2) [Reserved]

(3) Frequencies in the band 73.0-74.6 MHz may be assigned to stations authorized their use on or before December 1, 1961, but no new stations will be authorized in this band, nor will expansion of existing systems be permitted. (See also § 90.257.)

(4) Persons eligible in this service who are engaged in the transportation of natural gas by pipeline and who have a substantial requiremen mobile service communication w public utility company purcha such gas for distribution to the sumer may be authorized to ope on the Power Radio Service frequ or frequencies assigned to distributor(s). However, such ation shall be limited to commu tions in the local area common to parties and shall relate only to supply and distribution activities. application of any person seekin frequency assignment under the pr sions of this paragraph shall be ac panied by a written statement the natural gas distributor which curs in the need for such intercom nication, and consents to the u the natural gas supplier of the quencies involved.

(5) Frequencies in the 421-430 band are available in the Detr Cleveland, and Buffalo areas in cordance with the rules in §§ 90. through 90.281.

(e) *Limitation on number of frequ cies assignable.* Normally only one quency, or pair of frequencies in paired frequency mode of operat will be assigned for mobile service erations by a single applicant given area. The assignment of an a tional frequency or pair of frequen will be made only upon a satisfac showing of need, except that:

(1) Additional frequencies above MHz may be assigned in connecti with operation of mobile repeaters accordance with § 90.247 not w standing this limitation.

(2) Frequencies in the ranges 30. 30.57 MHz, 35.00-35.01 MHz, 35. 36.00 MHz, and 37.00-37.01 MHz available for developmental operati by applicants in this service subject the provisions of Subpart Q notwi standing this limitation.

(3) Authorizations for multiple quencies for geophysical operatio will be granted on the frequencies erned by the limitations in paragra (c)(3) and (4) of this section notwi standing this limitation. Howe each geophysical exploration pa may only use a maximum of four quencies at any one time.

(4) Frequencies in the 25-50 M 150-170 MHz, and 450-512 MHz ban

and the frequency bands 903-904 MHz, 904-912 MHz, 918-926 MHz, and 926-927 MHz may be assigned for the operation of Automatic Vehicle Monitoring (AVM) systems in accordance with § 90.239, notwithstanding this limitation.

(Secs. 4(i) and 303(r), Communications Act of 1934, as amended, §§ 0.131 and 0.331 of the Commission's Rules and 5 U.S.C. 553 (b)(3)(B) and (d)(3))

[43 FR 54791, Nov. 22, 1978]

Editorial Note: For Federal Register citations affecting § 90.65, see the List of CFR Sections Affected in the Finding Aids section of this volume.

§ 90.67 Forest Products Radio Service.

(a) *Eligibility.* Persons primarily engaged in any of the following activities are eligible to hold authorizations in the Forest Products Radio Service to operate radio stations for transmission of communications essential to such activities of the licensee:

(1) Tree logging, tree farming, or related woods operations, including related hauling activities, if the hauling activities are performed under contract to, and exclusively for, persons engaged in woods operations;

(2) Manufacturing lumber, plywood, hardboard, or pulp and paper products from wood fiber by persons eligible under the provisions of subparagraph (1) of this paragraph.

(b) *Frequencies available.* The following table indicates frequencies available for assignment to stations in the Forest Products Radio Service, together with the class of station(s) to which they are normally assigned and the specific assignment limitations which are explained in paragraph (c) of this section:

Forest Products Radio Service Frequency Table

Frequency or band	Class of station(s)	Limitations
Kilohertz:		
1676	Base or mobile	1
1700	do	1
2398	do	1
Megahertz:		
29.71	do	
29.73	do	
29.75	do	
29.77	do	
29.79	do	
30.66	do	
30.72	do	
31.48	do	30
31.52	do	30
31.64	do	30
31.72	do	30
31.76	do	30
37.44	do	
37.88	do	
43.02	do	30
43.28	do	30
43.36	do	30
43.40	do	30
43.52	do	30
48.56	do	2
48.58	do	2
48.60	do	2
48.62	do	2
48.64	do	2
48.66	do	2
48.68	do	2
48.70	do	2
48.72	do	2
48.74	do	2
48.76	do	2
48.78	do	2
48.80	do	2
48.82	do	2
48.84	do	2
48.86	do	2
48.88	do	2
48.90	do	2
48.92	do	2
48.94	do	2
48.96	do	2
48.98	do	2
49.00	do	2
49.02	do	2
49.04	do	2
49.06	do	2
49.08	do	2
49.10	do	2
49.12	do	2
49.14	do	2
49.16	do	2
49.18	do	2
49.20	do	2
49.22	do	2
49.24	do	2
49.26	do	2
49.28	do	2
49.30	do	2
49.32	do	2
49.34	do	2
49.36	do	2
49.38	do	2
49.40	do	2
49.42	do	2
49.44	do	2
49.46	do	2
49.48	do	2
49.50	do	2
49.54	do	3
49.58	do	3
72.00 to 76.00	Operational fixed	4
72.44	Mobile	34
72.48	do	34
72.52	do	34

Forest Products Radio Service Frequency Table—Continued

Frequency or band	Class of station(s)	Limitations
72.56	do	34
72.60	do	34
75.44	do	34
75.48	do	34
75.52	do	34
75.56	do	34
75.60	do	34
150-170	Base or mobile	36
152.465	do	29
152.480	do	5
153.050	do	6, 31, 33
153.065	do	6
153.080	do	6
153.095	do	6
153.110	do	6
153.125	do	6, 31, 33
153.140	do	6
153.155	do	6
153.170	do	6
153.185	do	6
153.200	do	6
153.215	do	6
153.230	do	6
153.245	do	6
153.260	do	6
153.275	do	6
153.290	do	6
153.305	do	6
153.320	do	6
153.335	do	6, 31
153.350	do	6, 31
153.365	do	6, 31
153.380	do	6, 31
153.395	do	6, 31
153.425	do	7
153.440	do	2, 8
153.455	do	7
153.485	do	7
153.500	do	2, 8
153.515	do	7
153.545	do	7
153.560	do	2, 8
153.575	do	7
153.605	do	7
153.620	do	2, 8
153.635	do	7
153.665	do	7
153.680	do	2, 8
154.45625	Fixed or mobile	13, 14, 25, 27
154.46375	do	13, 14, 24, 25, 26
154.47125	do	13, 14, 24, 25
154.47875	do	13, 14, 25, 27
154.570	Mobile	9
154.600	do	9
154.625	Base or mobile	5
157.725	do	29
157.740	do	5
158.145	do	10
158.160	do	2, 11
158.175	do	10
158.205	do	10
158.220	do	2, 11
158.235	do	10
158.265	do	10
158.280	do	6
158.295	do	6
158.310	do	6
158.325	do	6, 31, 33

Forest Products Radio Service Fre
Table—Continued

Frequency or band	Class of station(s)	
158.355	do	
158.370	do	
158.415	do	
158.430	do	
158.460	do	
169.172	Mobile, operational fixed.	
173.20375	Fixed or mobile	13
173.2100	do	13
173.2375	do	13
173.250	Base or mobile	
173.2625	Fixed or mobile	13,
173.2875	do	13,
173.300	Base or mobile	
173.3125	Fixed or mobile	13,
173.3375	do	13,
173.350	Base or mobile	
173.3625	Fixed or mobile	13,
173.3900	do	13,
173.39625	do	13,
216-220	Base or mobile	
406-413	Operational fixed	
450-470	Fixed	
451.175	Base or mobile	
451.225	do	
451.275	do	
451.375	do	
451.425	do	
451.475	do	
451.525	do	
451.550	do	
451.575	do	
451.600	do	
451.625	do	
451.650	do	
451.675	do	
451.700	do	
451.750	do	
452.100	do	
452.200	do	
452.225	do	
452.250	do	
452.275	do	
452.350	do	
452.400	do	
452.450	do	
456.175	Mobile	
456.225	do	
456.275	do	
456.375	do	
456.425	do	
456.475	do	
456.525	do	
456.550	do	
456.575	do	
456.600	do	
456.625	do	
456.650	do	
456.675	do	
456.700	do	
456.750	do	
457.100	do	
457.200	do	
457.225	do	
457.250	do	
457.275	do	
457.350	do	
457.400	do	
457.450	do	

Forest Products Radio Service Frequency Table—Continued

Frequency or band	Class of station(s)	Limitations
462.475	Base or mobile	18
462.525	do	18
467.475	Mobile	18
467.525	do	18
470 to 512	Base or mobile	19
806 to 821	Mobile only	20
851 to 866	Base or mobile	20
896 to 901	Mobile	20
928 and above	Operational-fixed	21
929 to 930	Base only	35
935 to 940	Base or mobile	20
1427 to 1435	Operational-fixed, base or mobile.	16
2450-2500	Base or mobile	22
6425-6525	do	23
10,550-10,680*	do	

* The frequencies in the band 10.55–10.68 GHz are available for Digital Termination Systems and for associated internodal links in the Point-to-Point Microwave Radio Service. No new licenses will be issued under this subpart but current licenses will be renewed.

(c) Explanation of assignment limitations appearing in the frequency tabulation of paragraph (b) of this section:

(1) Frequencies below 25 MHz will be assigned to base or mobile stations in this service only upon a satisfactory showing that, from a safety of life standpoint, frequencies above 25 MHz will not meet the operational requirements of the applicant.

(2) This frequency is shared with the Petroleum Radio Service.

(3) This frequency is shared with the Special Industrial Radio Service.

(4) The frequencies available for use at operational fixed stations in the band 72-76 MHz are listed in § 90.257(a)(1). These frequencies are shared with other services and are available only in accordance with the provisions of § 90.257.

(5) This frequency is available in this service and in the Special Industrial Radio Service on a secondary basis to one-way paging communications authorized in the Business Radio Service.

(6) This frequency is shared with the Petroleum and Manufacturers Radio Services.

(7) This frequency is shared with the Power and Petroleum Radio Service and is available in this service only in the States of Arkansas, Louisiana, Oklahoma, and Texas. Elsewhere it is available in the Power Radio Service.

(8) This frequency is available for assignment in this service, only in the States of Arkansas, Louisiana, Oklahoma, and Texas. Elsewhere, this frequency is available in the Power Radio Service.

(9) Authorizations to operate on this frequency will be issued for A2B, A2D, F2B or F2D emission for tone signaling or for a combination of such emission with A3E, F3E or G3E emission with a maximum bandwidth of 20 kHz. The output power shall not exceed 2 watts. The maximum distance between any transmitter and the center of the radiating portion of its antenna shall not exceed 8 m. (25 ft.) Operation on this frequency is secondary to stations in the Business Radio Service.

(10) This frequency is shared with Power and Petroleum Radio Services and is available in this service only in the States of Arkansas, Louisiana, Oklahoma, Oregon, Texas, and Washington.

(11) This frequency is available for assignment in this service, only in the States of Arkansas, Louisiana, Oklahoma, Oregon, Texas, and Washington. Elsewhere it is available in the Power Radio Service.

(12) Frequencies in this band will be assigned only for transmitting hydrological or meteorological data or for low power wireless microphones in accordance with the provisions of § 90.265.

(13) This frequency is available on a shared basis with the Local Government, Power, Petroleum, Special Industrial, Business, and Manufacturers Radio Services for remote control and telemetry operations.

(14) For FM transmitters the sum of the highest modulating frequency and the amount of frequency deviation may not exceed 2.8 kHz and the maximum deviation may not exceed 2.5 kHz. For AM transmitters the highest modulating frequency may not exceed 2 kHz. The carrier frequency must be maintained within 0.0005 percent and the authorized bandwidth may not exceed 6 kHz.

(15) For FM transmitters the sum of the highest modulating frequency and the amount of frequency deviation may not exceed 1.7 kHz and the maximum deviation may not exceed 1.2

kHz. For AM transmitters the highest modulating frequency may not exceed 1.2 kHz. The carrier frequency must be maintained within 0.0005 percent and the authorized bandwidth may not exceed 3 kHz.

(16) This band is available to stations in this service subject to the provisions of § 90.259.

(17) The frequencies available for use at fixed stations in this band, and the requirements for assignment are set forth in § 90.261. Operation on these frequencies is secondary to stations in the Public Safety and Land Transportation Radio Services where they are assigned for land mobile operations.

(18) This frequency is available on a shared basis in the Power, Petroleum, Forest Products, Manufacturers, and Telephone Maintenance Radio Services. It may be assigned only when all of the frequencies in the 450-470 MHz band allocated to the service in which the applicant is primarily eligible are assigned within the 56 km. (35 mi) of the proposed base station.

(19) Subpart L contains rules for assignment of frequencies in the 470-512 MHz band.

(20) Subpart S contains rules for assignment of frequencies in the 806-821/851-866 and 896-901/935-940 MHz bands.

(21) Assignment of frequencies above 928 MHz for operational-fixed stations is governed by Part 94 of this chapter.

(22) Available only on a shared basis with stations in other services, and subject to no protection from interference due to the operation of industrial, scientific, or medical (ISM) devices. In the 2483.5-2500 MHz band, no applications for new or modification to existing stations to increase the number of transmitters will be accepted. Existing licensees as of July 25, 1985, or on a subsequent date following as a result of submitting an application for license on or before July 25, 1985, are grandfathered and their operation is co-primary with the Radiodetermination Satellite Service.

(23) Use of this frequency band is limited to developmental operation and is subject to the provisions of Subpart Q.

(24) The maximum output power of the transmitter may not exceed 50 watts for fixed stations and 3 watts for mobile stations. A1A, A1D, A2B, A2D, F1B, F1D, F2B, F2D, G1B, G1D, G2B or G2D emission may be authorized.

(25) Operational fixed stations must employ directional antennas having a front-to-back ratio of at least 20 db. Omnidirectional antennas having unity gain may be employed for stations communicating with at least three receiving locations separated by 160° of azimuth.

(26) Use of this frequency is limited to stations located at least 120.7 km (75 miles) from the center of any urbanized area of 200,000 or more population (U.S. Census of Population 1970). Operation is on a secondary basis to that in the Power Radio Service.

(27) The maximum effective radiated power (ERP) may not exceed 20 watts for fixed stations and 2 watts for mobile stations. The height of the antenna system may not exceed 15.24 meters (50 feet) above ground. All such operation is on a secondary basis to adjacent land mobile operations.

(28) This frequency is shared with the Taxicab Radio Service. It is available for assignment in this service only in the states of Washington, Oregon, Idaho, and Montana in areas at least 40 miles from the center of urbanized areas of 200,000 or more population (U.S. Census of Population 1970). The maximum output power is limited to 75 watts.

(29) This frequency is shared with the Taxicab and Special Industrial Radio Services. Use of this frequency is limited to stations located at least 80.5 km (50 miles) from the center of any urbanized area of 600,000 or more population (U.S. Census of Population 1970). All operations on this frequency are limited to a maximum transmitter output power of 75 watts.

(30) This frequency is shared with the Special Industrial Radio Service and is available for assignment in the Forest Products Radio Service only in the States of Washington; Oregon; Idaho; Nevada, and Montana west of Longitude 110 degrees; and California north at Latitude 39 degrees. Evidence of interservice frequency coordination

required, and mobile relay stations
l not be authorized.
31) This frequency is shared with
e Special Industrial Radio Service in
e States of North Dakota; South
kota; Iowa; Nebraska; Kansas and
ssouri beyond 50 miles from St.
uis and Kansas City; Colorado and
yoming east of Longitude 106 de-
es; and Minnesota south of Lati-
le 47 degrees.
32) This frequency is shared with
e Special Industrial Radio Service in
e States of North Dakota; South
kota; Iowa; Nebraska; Kansas; Mis-
ri; Colorado and Wyoming east of
ngitude 106 degrees; and Minnesota
ith of Latitude 47 degrees.
33) This frequency may not be
red in the Special Industrial Radio
vice within 20 miles of the cities of
luth, Minnesota; Des Moines and
venport, Iowa; Omaha, Nebraska;
orado Springs, Colorado; and Wich-
Kansas.
34) This frequency is available on a
red basis in the Manufacturers,
est Products, Special Industrial
l Railroad Radio Services and inter-
vice coordination is required. All
mmunications on this frequency
st be conducted within the bound-
es of a logging site or confines of a
nt, factory, lumber or paper mill.
operations on this frequency are
ject to the provisions of § 90.257(b).
35) Frequencies in this band are
ilable only for one-way paging op-
tions in accordance with § 90.494.
36) Rules concerning the use of this
d for narrowband operations are
forth in § 90.271.
l) *Additional frequencies available.*
addition to the frequencies shown
he frequency table of this section,
following frequencies are available
his service (See also § 90.253.)
) Frequencies may be substituted
those available below 25 MHz in
ordance with the provisions of
.253.
) [Reserved]
) Frequencies in the band 73.0–74.6
z may be assigned to stations au-
rized their use on or before Decem-
1, 1961, but no new stations will be
horized in this band, nor will ex-
sion of existing systems be permit-
(See also § 90.257.)

(4) Frequencies in the 421–430 MHz band are available in the Detroit, Cleveland, and Buffalo areas in accordance with the rules in §§ 90.273 through 90.281.

(e) *Limitation on number of frequencies assignable.* Normally only one frequency or pair of frequencies in the pair frequency mode of operation, will be assigned for mobile service operations by a single applicant in a given area. The assignment of an additional frequency or pair of frequencies will be made only upon a satisfactory showing of need, except that:

(1) Additional frequencies above 25 MHz may be assigned in connection with Operation of mobile repeaters in accordance with § 90.247 notwithstanding this limitation.

(2) Frequencies in the ranges 30.56–30.57 MHz, 35.00–35.01 MHz, 35.99–36.00 MHz, and 37.00–37.01 MHz are available for developmental operation by applicants in this service subject to the provisions of Subpart Q notwithstanding this limitation.

(3) Frequencies in the 25–50 MHz, 150–170 MHz, and 450–512 MHz bands, and the frequency bands 903–904 MHz, 904–912 MHz, 918–926 MHz, and 926–927 MHz may be assigned for the operations of Automatic Vehicle Monitoring (AVM) systems in accordance with § 90.239, notwithstanding this limitation.

(Secs. 4(i) and 303(r), Communications Act of 1934, as amended, §§ 0.131 and 0.331 of the Commission's Rules and 5 U.S.C. 553 (b)(3)(B) and (d)(3); 47 U.S.C. 154(i) and 303)

[43 FR 54791, Nov. 22, 1978]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 90.67, see the List of CFR Sections Affected in the Finding Aids section of this volume.

§ 90.69 Motion Picture Radio Service.

(a) *Eligibility.* Persons primarily engaged in the production or filming of motion pictures are eligible to hold authorizations in the Motion Picture Radio Service to operate radio stations for transmission of communications essential to such activities of the licensee.

(b) *Frequencies available.* The following table indicates frequencies available for assignment to stations in the Motion Picture Radio Service, together with the class of station(s) to which they are normally assigned and the specific assignment limitations which are explained in paragraph (c) of this section:

Motion Picture Radio Service Frequency Table

Frequency or band	Class of station(s)	Limitations
Kilohertz:		
1628	Base or mobile	1
1652	do	1
2292	do	1
2398	do	1
4637.5	do	1
Megahertz:		
72.00 to 76.00	Operational fixed	2
150–170	Base or mobile	12
152.87	do	3
152.90	do	3
152.93	do	3
152.96	do	3
152.99	do	3
153.02	do	3
169–172	Mobile	11
173.225	Base or mobile	4
173.275	do	4
173.325	do	4
173.375	do	4
806 to 821	Mobile	5
851 to 866	Base or mobile	5
896 to 901	Mobile	5
928 and above	Operational-fixed	6
929 to 930	Base only	10
935 to 940	Base or mobile	5
1427 to 1435	Operational-fixed, base or mobile.	7
2450 to 2500	Base or mobile	8
8400 to 8500	do	9
10,550 to 10,680*	do	

* The frequencies in the band 10.55–10.68 GHz are available for Digital Termination Systems and for associated internodal links in the Point-to-Point Microwave Radio Service. No new licenses will be issued under this subpart but current licenses will be renewed.

(c) Explanation of assignment limitations appearing in the frequency table of paragraph (b) of this section:

(1) Frequencies below 25 MHz will be assigned to base or mobile stations in this service only upon a satisfactory showing that, from a safety of life standpoint, frequencies above 25 MHz will not meet the operational requirements of the applicant.

(2) The frequencies available for use at operational fixed stations in the band 72–76 MHz are listed in § 90.257(a)(1). These frequencies are shared with other services and are available only in accordance with the provisions of § 90.257.

(3) This frequency is shared with the Special Industrial Radio Service.

(4) This frequency is shared with the Relay Press Radio Service.

(5) Subpart S contains rules for assignment of frequencies in the 806-821/851-866 and 896-901/935-940 MHz bands.

(6) Assignment of frequencies above 928 MHz for operational-fixed stations is governed by Part 94 of this chapter.

(7) This band is available in this service subject to the provisions of § 90.259.

(8) Available only on a shared basis with stations in other services, and subject to no protection from interference due to the operation of industrial, scientific, or medical (ISM) devices. In the 2483.5-2500 MHz band, no applications for new or modification to existing stations to increase the number of transmitters will be accepted. Existing licensees as of July 25, 1985, or on a subsequent date following as a result of submitting an application for license on or before July 25, 1985, are grandfathered and their operation is co-primary with the Radiodetermination Satellite Service.

(9) Use of this frequency band is limited to developmental operation and is subject to the provisions of Subpart Q.

(10) Frequencies in this band are available only for one-way paging operations in accordance with § 90.494.

(11) Frequencies in this band will be assigned for low power wireless microphones in accordance with the provisions of § 90.265.

(12) Rules concerning the use of this band for narrowband operations are set forth in § 90.271.

(d) *Additional frequencies available.* In addition to the frequencies shown in the frequency table of this section, the following frequencies are available in this service.

(1) Frequencies may be substituted for those available below 25 MHz in accordance with the provisions of § 90.263.

(2) [Reserved]

(3) Frequencies in the band 73-74.6 MHz may be assigned to stations authorized their use on or before December 1, 1961, but no new stations will be authorized in this band, nor will ex-

sion of existing systems be permit-

) Frequencies in the 421–430 MHz d are available in the Detroit, veland, and Buffalo areas in ac- dance with the rules in §§ 90.273 ough 90.281.

) *Limitation on number of frequen- assignable.* Normally only one fre- ncy, or pair of frequencies in the red frequency mode of operation, be assigned for mobile service op- tions by a single applicant in a en area. The assignment of an addi- al frequency or pair of frequencies be made only upon a satisfactory wing of need, except that:

1) Additional frequencies above 25 Iz may be assigned in connection h operation of mobile repeaters in ordance with § 90.247, notwith- nding this limitation.

2) Frequencies in the ranges 30.56– 57 MHz, 35.00–35.01 MHz, 35.99– 00 MHz, and 37.00–37–01 MHz are ilable for assignment for develop- ntal operation by applicants in this vice subject to the provisions of bpart Q notwithstanding this limi- ion.

3) Frequencies in the 25–50 MHz,)-170 MHz, and 450–512 MHz bands, d the frequency bands 903–904 MHz, 1-912 MHz, 918–926 MHz, and 926– 7 MHz, may be assigned for the op- ation of Automatic Vehicle Monitor- (AVM) systems in accordance with 0.239, notwithstanding this limita- n.

ecs. 4(i) and 303(r), Communications Act 1934, as amended, §§ 0.131 and 0.331 of e Commission's Rules and 5 U.S.C. 553 (3)(B) and (d)(3); 47 U.S.C. 154(i) and 3))

3 FR 54791, Nov. 22, 1978]

EDITORIAL NOTE: For FEDERAL REGISTER ci- tions affecting § 90.69, see the List of CFR ctions Affected in the Finding Aids sec- n of this volume.

90.71 Relay Press Radio Service.

(a) *Eligibility.* Persons primarily en- ged in the publication of a newspa- er or in the operation of an estab- shed press association are eligible to old authorizations in the Relay Press adio Service to operate radio stations r transmission of communications essential to such activities of the licensee.

(b) *Frequencies available.* The following table indicates frequencies available for assignment to stations in the Relay Press Radio Service, together with the class of station(s) to which they are normally assigned and the specific assignment limitations which are explained in paragraph (c) of this section:

Relay Press Radio Service Frequency Table

Frequency or band	Class of station(s)	Limitations
Megahertz:		
72.0 to 76.0	Operational fixed	1
169–172	Mobile	8
173.225	Base or mobile	2
173.275	do	2
173.325	do	2
173.375	do	2
452.975	do	
453.000	do	
457.975	Mobile	
458.000	do	
806 to 821	do	3
851 to 866	Base or mobile	3
896 to 901	Mobile	3
928 and above	Operational-fixed	4
929 to 930	Base only	9
935 to 940	Base or mobile	3
1427 to 1435	Operational-fixed, base or mobile.	5
2450 to 2500	Base or mobile	6
8400 to 8500	do	7
10,550 to 10,680*	do	

* The frequencies in the band 10.55–10.68 GHz are available for Digital Termination Systems and for associated intermodal links in the Point-to-Point Microwave Radio Service. No new licenses will be issued under this subpart but current licenses will be renewed.

(c) Explanation of assignment limitations appearing in the frequency table of paragraph (b) of this section:

(1) The frequencies available in the band 72–76 MHz are listed in § 90.257(a)(1). These frequencies are shared with other services and are available only in accordance with the provisions of § 90.257.

(2) This frequency is shared with the Motion Picture Radio Service.

(3) Subpart S contains rules for assignment of frequencies in the 806–821/851–866 and 896–901/935–940 MHz bands.

(4) Assignment of frequencies above 928 MHz for operational-fixed stations is governed by Part 94 of this chapter.

(5) This band is available in this service subject to the provisions of § 90.259.

(6) Available only on a shared basis with stations in other services, and subject to no protection from interference due to the operation of industrial, scientific, or medical (ISM) devices. In the 2483.5-2500 MHz band, no applications for new or modification to existing stations to increase the number of transmitters will be accepted. Existing licensees as of July 25, 1985, or on a subsequent date following as a result of submitting an application for license on or before July 25, 1985, are grandfathered and their operation is co-primary with the Radiodetermination Satellite Service.

(7) Use of this frequency band is limited to developmental operation and is subject to the provisions of Subpart Q.

(8) Frequencies in this band will be assigned for low power wireless microphones in accordance with the provisions of § 90.265.

(9) Frequencies in this band are available only for one-way paging operations in accordance with § 90.494.

(d) *Additional frequencies available.* In addition to the frequencies shown in the frequency table of this section the following frequencies are available in this service. (See § 90.253.)

(1) [Reserved]

(2) Frequencies in the band 73-74.6 MHz may be assigned to stations authorized their use on or before December 1, 1961, but no new stations will be authorized in this band, nor will expansion of existing systems be permitted. (See also § 90.257.)

(3) Frequencies in the 421-430 MHz band are available in the Detroit, Cleveland, and Buffalo areas in accordance with the rules in §§ 90.273 through 90.281.

(e) *Limitation on number of frequencies assignable.* Normal only one frequency, or pair of frequencies in the paired frequency mode of operation, will be assigned for mobile service operations by a single application in a given area. The assignment of an additional frequency or pair of frequencies will be made only upon a satisfactory showing of need, except that:

(1) Additional frequencies above 25 MHz may be assigned in connection with operation of mobile repeaters in accordance with § 90.247 notwithstanding this limitation.

(2) Frequencies in the ranges 30.56-30.57 MHz, 35.00-35.01 MHz, 35.99-36.00 MHz, and 37.00-37.01 MHz are available for assignment to applicants in this service subject to the provisions of Subpart Q notwithstanding this limitation.

(3) Frequencies in the 25-50 MHz, 150-170 MHz, and 450-512 MHz bands and the frequency bands 903-904 MHz, 904-912 MHz, 918-926 MHz, and 926-927 MHz may be assigned for the operation of Automatic Vehicle Monitoring (AVM) systems in accordance with § 90.239, notwithstanding this limitation.

(Secs. 4(i) and 303(r), Communications Act of 1934, as amended, §§ 0.131 and 0.331 of the Commission's Rules and 5 U.S.C. 553 (b)(3)(B) and (d)(3); 47 U.S.C. 154(i) and 303)

[43 FR 54791, Nov. 22, 1978]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 90.71, see the List of CFR Sections Affected in the Finding Aids section of this volume.

§ 90.73 Special Industrial Radio Service.

(a) *Eligibility.* Persons regularly engaged in any of the following activities are eligible to hold authorizations in the Special Industrial Radio Service to operate radio stations for the transmission of only those communications essential to such activities of the licensee. (Persons engaging in some activities which are eligible under this paragraph and in some which are not and desiring to use radio in connections with both types of activities should apply for authorization in the Business Radio Service.)

(1) The operation of farms, ranches or similar land areas, for the quantity production of crops or plants; vines or trees (excluding forestry operations) or for the keeping, grazing or feeding of livestock for animal products, animal increase, or value enhancement. Persons establishing eligibility under this subparagraph may use their radio facilities in connection with the gathering or processing of products grown or raised for them by others.

(2) Plowing, soil conditioning, seeding, fertilizing, or harvesting for agricultural activities.

(3) Spraying or dusting of insecticides, herbicides, or fungicides, in areas other than enclosed structures.

(4) Livestock breeding service.

(5) The operation of a commercial business regularly engaged in the construction of roads, bridges, sewer systems, pipelines, airfields, or water, oil, gas, or power production, collection, or distribution systems. Other engineering projects, normally classified as heavy construction activities, will be considered on the merits of the showing made, however, the construction of buildings is not included in this category.

(6) The operation of mines for the recovery of solid fuels, minerals, metal, rock, sand and gravel from the earth or the sea, including the exploration for and development of mining properties.

(7) Maintaining, patrolling or repairing gas or liquid transmission pipelines, tank cars, water or waste disposal wells, industrial storage tanks, or distribution systems of public utilities. Persons establishing eligibility under this subparagraph may use their radio facilities in connection with the containment and cleanup of industrial liquid spillage.

(8) Acidizing, cementing, logging, perforating, or shooting activities, and services of a similar nature incident to the drilling of new oil or gas wells, or the maintenance of production from established wells.

(9) Supplying chemicals, mud, tools, pipe, and other materials or equipment unique to the petroleum and gas production industry, as the primary activity of the applicant if delivery, installation or application of these materials requires the use of specifically fitted conveyances.

(10) The delivery of ice or fuel to the consumer for heating, lighting, refrigeration or power generation purposes, by means other than pipelines or railroads when such products are not to be resold following their delivery. Persons establishing eligibility under this subparagraph may use their radio facilities in connection with the servicing of the equipment that uses or consumes the products delivered.

(11) The delivery and pouring of ready mixed concrete or hot asphalt mix.

(b) [Reserved]

(c) *Frequencies available.* The following table indicates frequencies available for assignment to stations in the Special Industrial Radio Service together with the class of station(s) to which they are normally assigned, and the specific assignment limitations which are explained in paragraph (d) of this section.

SPECIAL INDUSTRIAL RADIO SERVICE FREQUENCY TABLE

Frequency or band	Class of station(s)	Limitations
Kilohertz:		
2,000 to 25,000	Fixed, base or mobile.	1
2292	Base or mobile	1, 34
2398	do	1, 34
4637.5	do	1, 34
Megahertz:		
30.58	do	2
30.60	do	2
30.62	do	2
30.64	do	34
31.28	do	34
31.32	do	29, 34
31.36	do	34
31.40	do	29, 34
31.44	do	29,34
31.48	do	29, 31, 34
31.52	do	29, 31, 34
31.56	do	34
31.60	do	29, 34
31.64	do	29, 31, 34
31.68	do	34
31.72	do	29, 31, 34
31.76	do	29, 31, 34
31.80	do	34
31.84	do	34
31.88	do	34
31.92	do	34
31.96	do	34
33.12	do	3, 34
35.28	do	34
35.32	do	34
35.36	do	34
35.40	do	34
35.44	do	34
35.48	do	29, 34
35.52	do	34
35.74	do	2
35.76	do	2
35.78	do	2
35.80	do	2
35.82	do	2
35.84	do	2
35.86	do	2
43.02	do	31, 34
43.04	do	[illegible]
43.06	do	34
43.08	do	34
43.10	do	34

Special Industrial Radio Service
Frequency Table—Continued

Frequency or band	Class of station(s)	Limitations
43.12	do	34
43.14	do	34
43.18	do	2
43.28	do	31, 34
43.32	do	34
43.36	do	31, 34
43.40	do	31, 34
43.44	do	34
43.48	do	34
43.52	do	31, 34
47.44	do	2
47.48	do	2
47.52	do	2
47.56	do	2
47.60	do	2
47.64	do	2
47.68	do	2
49.52	do	34
49.54	do	5, 34
49.56	do	2
49.58	do	5, 34
72-76	Operational fixed	6
72.44	Mobile	7
72.48	do	7
72.52	do	7
72.56	do	7
72.60	do	7
75.44	do	7
75.48	do	7
75.52	do	7
75.56	do	7
75.60	do	7
150-170	Base or mobile	35
151.490	do	2, 8
151.505	do	4
151.520	do	2
151.535	do	2
151.550	do	2
151.565	do	2
151.580	do	2
151.595	do	2
152.465	do	2, 28
152.48	do	2, 9
152.870	do	10, 34
152.885	do	2
152.900	do	2, 10
152.915	do	2
152.930	do	2, 10
152.945	do	2
152.960	do	2, 10
152.975	do	2
152.990	do	2, 10
153.005	do	2
153.020	do	2, 10
153.035	do	2, 11
153.050	do	2, 30, 33
153.125	do	2, 30, 33
153.335	do	2, 30
153.350	do	2, 30
153.365	do	2, 30
153.380	do	2, 30
153.395	do	2, 30
154.45625	Fixed or mobile	12, 13, 15, 25
154.46375	do	12, 13, 15, 26, 27
154.47125	do	12, 13, 15, 27
154.47875	do	12, 13, 15, 25
154.49	Base or mobile	2
154.625	do	2, 9
157.725	do	2, 28

Special Industrial Radio Service
Frequency Table—Continued

Frequency or band	Class of station(s)	Limitations
157.740	do	2
158.325	do	2, 30,
158.355	do	2
158.385	do	
158.400	do	
158.415	do	2, 30,
158.460	do	2
169 to 172	Mobile, operational fixed.	
173.20375	Fixed or mobile	12, 13, 15,
173.2100	do	12, 15, 16,
173.2375	do	12, 13, 15,
173.2625	do	12, 13, 15,
173.2875	do	12, 13, 15,
173.3125	do	12, 13, 15,
173.3375	do	12, 13, 15,
173.3625	do	12, 13, 15,
173.3900	do	12, 15, 16,
173.39625	do	12, 13, 15,
216 to 220	Base or mobile	
406-413	Operational fixed	
450 to 470	Fixed	
451.725	Base or mobile	
451.775	do	
451.800	Operational fixed, base or mobile	4
451.825	Base or mobile	
451.850	do	
451.875	do	
451.900	do	
451.925	do	
451.950	do	
451.975	do	
452.000	do	
452.025	do	
452.075	do	
452.125	do	
452.175	do	
456.725	Mobile	
456.775	do	
456.800	Operational fixed, base or mobile.	4,
456.825	Mobile	
456.850	do	
456.875	do	
456.900	do	
456.925	do	
456.950	do	
456.975	do	
457.000	do	
457.025	do	
457.075	do	
457.125	do	
457.175	do	
470 to 512	Base or mobile	3
806 to 821	Mobile	3
851 to 866	Base or mobile	2
896 to 901	Mobile	2
928 and above	Operational-fixed	2
929 to 930	Base only	3
935 to 940	Base or mobile	2
1427 to 1435	Operational-fixed, base or mobile.	1
2450 to 2500	Base or mobile	2
8400 to 8500	do	2
10,550 to 10,680*.	do	

The frequencies in the band 10.55–10.68 GHz are available for Digital Termination Systems and for associated intermodal links in the Point-to-Point Microwave Radio Service. No new licenses will be issued under this subpart but current licenses will be renewed.

(d) Explanation of assignment limitations appearing in the fequency table of paragraph (c) of this section:

(1) Only entities engaged in exploration, its support services, and the repair of pipelines are eligible to use this spectrum, and then only in accordance with § 90.266. Except as provided in this part, licensees may not use these frequencies in the place of other operational circuits permitted by the Commission's Rules. The use of these frequencies is not subject to § 90.73(f). Circuits operating on these frequencies may be used only for the following purposes:

(i) Exploratory efforts in mining for solid fuels, minerals, and metals important to the national interest;

(ii) Repair of pipelines used for the transmission of fuel or water; and,

(iii) Services supporting the exploration for energy or mineral resources important to the national interest, without which such exploration cannot be conducted.

(2) This frequency will be assigned only for operation in a permanent area, normally within 120 km (75 mi.) of a specified reference point.

(3) Operation on this frequency is limited to a maximum output of 2 watts; and each station authorized will be classified and licensed as a mobile station. Any units of such a station, however, may provide the operational functions of a base or fixed station, on a secondary [illegible] to mobile service operations pr[illegible] that the separation between th[illegible]rol point and the center of t[illegible]ating portion of the antenna of [illegible] units so used does not exceed 25 feet (7.6 m).

(4) This frequency will be assigned only to stations used in itinerant operations.

(5) This frequency is shared with the Forest Products Radio Service.

(6) The frequencies available in the band 72–76 MHz are listed in § 90.257(a)(1). These frequencies are shared with other services and are available only in accordance with the provisions of § 90.257.

(7) This frequency is available on a shared basis in the Manufacturers, Forest Products, Special Industrial and Railroad Radio Services and interservice coordination is required. All communications must be conducted within the boundaries or confines of a plant, factory, shipyard, mill, mine, farm, ranch, or construction area. All operations on this frequency are subject to the provisions of § 90.257(b).

(8) This frequency is not available to stations in Puerto Rico or the Virgin Islands. Elsewhere, this frequency is shared with the Forestry-Conservation Radio Service and interservice coordination is required.

(9) This frequency is available in this service and in the Forest Products Radio Service on a secondary basis to one-way paging communications authorized in the Business Radio Service.

(10) This frequency is shared with the Motion Picture Radio Service.

(11) This frequency band is shared with the Petroleum Radio Service.

(12) Operational fixed stations must employ directional antennas having a front-to-back ratio of at least 20 dB. Omnidirectional antennas having unity gain may be employed for stations communicating with at least three receiving locations separated by 160° of azimuth.

(13) For FM transmitters the sum of the highest modulating frequency and the amount of frequency deviation may not exceed 2.8 kHz and the maximum frequency deviation may not exceed 2.5 kHz. For AM transmitters, the highest modulating frequency may not exceed 2.0 kHz. The carrier frequency must be maintained within 0.0005 percent and the authorized bandwidth may not exceed 6 kHz.

(14) Frequencies in this band will be assigned only for transmitting hydrological or meteorological data or for low power wireless microphones in accordance with the provisions of § 90.265.

(15) This frequency band is shared with the Power, Forest Products, Special Industrial, Petroleum, Manufacturers, Business, and the Local Government Radio Services for remote control and telemetry operations.

(16) For FM transmitters the sum of the highest modulation frequency and the amount of frequency deviation may not exceed 1.7 kHz and the maximum deviation may not exceed 1.2 kHz. For AM transmitters the highest modulating frequency may not exceed 1.2 kHz. The carrier frequency must be maintained within 0.0005 percent and the authorized bandwidth may not exceed 3 kHz.

(17) This frequency band is available to stations in the service subject to the provisions of § 90.259.

(18) The frequencies available for use at fixed stations in this band, and the requirements for assignment are set forth in § 90.261. Operation on these frequencies is secondary to stations in the Public Safety and Land Transportation Radio Services where they are assigned for land mobile operations.

(19) Operational fixed assignments on this frequency will only be made to an itinerant fixed control or relay station on a secondary basis to land-mobile stations in this service, provided that the fixed relay or control station is to be associated with base and mobile facilities authorized to use other frequencies available for itinerant operation in this service. All such use of these frequencies for fixed systems is limited to locations 161 or more km. (100 mi). from the center of any urbanized area of 200,000 or more population, except that the distance may be 120 km. (75 mi.) if the output power does not exceed 20 watts. All such fixed systems are limited to a maximum of two frequencies and must employ directional antennas with a front-to-back ratio of at least 15 dB. The centers of urbanized areas of 200,000 or more population are determined from the appendix, page 226, of the U.S. Commerce publication, "Air Line Distance Between Cities in the United States." Urbanized areas of 200,000 or more population are defined in the U.S. Census of Population, 1960, volume 1, table 23, page 1-50.

(20) Subpart L contains rules for assignment of frequencies in the 470-512 MHz band.

(21) Subpart S contains rules for assignment of frequencies in the 806-821/851-866 and 896-901/935-940 bands.

(22) Assignment of freque above 928 MHz for operational stations is governed by Part 94 of chapter.

(23) Available only on a shared with stations in other services, subject to no protection from inte ence due to the operation of indu al, scientific, or medical (ISM) dev In the 2483.5-2500 MHz band, n plications for new stations or modi tion to existing stations to inc the number of transmitters will b cepted. Existing licensees as of 25, 1985, or on a subsequent date lowing as a result of submitting a plication for license on or before 25, 1985, are grandfathered, and operation is co-primary with the diodetermination Satellite Service

(24) Use of this frequency ba limited to developmental oper and is subject to the provisions of part Q.

(25) The maximum effective ra ed power (ERP) may not excee watts for fixed stations and 2 watt mobile stations. The height of the tenna system may not exceed meters (50 feet) above ground. such operation is on a secondary to adjacent channel land mobile ations.

(26) Use of this frequency is lim to stations located at least 120. (75 miles) from the center of any banized area of 200, 000 or more p lation (U.S. Census of Popula 1970). Operation is on a secon basis to that in the Power Radio ice.

(27) The maximum output pow the transmitter may not excee watts for fixed stations and 1 wat mobile stations. A1A, A1D, A2B, F1B, F1D, F2B, F2D, G1B, G1D, or G2D emission may be authorize

(28) This frequency is shared the Taxicab and Forest Pro Radio Services. Use of this frequ is limited to stations located at 80.5 km (50 miles) from the cent any urbanized area of 600,000 or population (U.S. Census of Popula 1970). All operations on this frequ are limited to a transmitter ou power of 75 watts.

(29) This frequency is shared with the Petroleum Radio Service in the States of Texas and Louisiana within 75 miles of the Gulf of Mexico and in adjacent offshore waters.

(30) This frequency is shared with other Industrial Radio Services and is available for assignment in the Special Industrial Radio Service only in the States of North Dakota, South Dakota, Iowa, Nebraska, Kansas, and Missouri beyond 50 miles from St. Louis and Kansas City; Wyoming and Colorado east of Longitude 106 degrees except within a 50 mile radius of Denver; and Minnesota south of Latitude 47 degrees except within a 50 mile radius of St. Paul, Minnesota. The maximum transmitter output power may not exceed 110 watts.

(31) This frequency is shared with the Forest Products Radio Service in the States of Washington; Oregon; Idaho; Nevada; Montana west of Longitude 110 degrees; and California north of Latitude 39 degrees.

(32) This frequency is shared with other Industrial Radio Services and is available for assignment in the Special Industrial Radio Service only in the States of North Dakota, South Dakota, Iowa, Nebraska, Kansas, Missouri, Colorado, and Wyoming east of Latitude 106 degrees; and Minnesota south of Latitude 47 degrees. The maximum transmitter output power may not exceed 110 watts.

(33) This frequency is not available for assignment in the Special Industrial Radio Service within 20 miles of the cities of Duluth, MN, Des Moines and Davenport, IA; Omaha, NE; Colorado Springs, CO; and Wichita, KS.

(34) This frequency is for general use and may be assigned either for itinerant or permanent use operations.

(35) Rules concerning the use of this band for narrowband operations are set forth in § 90.271.

(36) Frequencies in this band are available only for one-way paging operations in accordance with § 90.494.

(e) *Additional frequencies available.* In addition to the frequencies shown in the frequency table of this section, the following frequencies are available in this service: (See also § 90.253)

(1) Frequencies may be substituted for those available below 25 MHz in accordance with the provisions of § 90.263.

(2) [Reserved]

(3) Frequencies in the band 73.0-74.6 MHz may be assigned to stations authorized their use on or before December 1, 1961, but no new stations will be authorized in this band, nor will expansion of existing systems be permitted. (See also § 90.257.)

(4) The following frequencies are available only in Puerto Rico and the Virgin Islands. These "Base and Mobile" and "Mobile only" frequencies are available on a shared basis in the Forestry-Conservation and Railroad Radio Services respectively. These "Mobile only" frequencies may be assigned to a control station associated with a mobile relay system if it is also assigned to the associated mobile station.

Base and mobile	Mobile only
159.240	160.410
159.255	160.425
159.270	160.440
159.285	160.455
159.300	160.470
159.315	160.485
159.330	160.500
159.345	160.515
159.360	160.530
159.375	160.545
159.390	160.560
159.405	160.575
159.420	160.590
159.435	160.605

(5) Land mobile service frequencies above 152 MHz which are listed elsewhere in this part as available to the Petroleum, Forest Products, and Manufacturers Radio Services, are also available, with the exception of the frequency 154.57 MHz, for assignment in this service for use in Hawaii, Puerto Rico, and the Virgin Islands, subject to the same limitations as apply in the Petroleum Forest Products, and Manufacturers Radio Services. Operation on such frequencies is secondary to stations operating in the Petroleum, Forest Products, or Manufacturers Radio Services and their use will be terminated if they are needed in the areas concerned in any of those services.

(6) Frequencies in the 421-430 MHz band are available in the Detroit, Cleveland, and Buffalo areas in accordance with the rules in §§ 90.273 through 90.281.

(f) *Limitation on number of frequencies assignable.* Normally only one frequency, or pair of frequencies in the paired frequency mode of operation, will be assigned for mobile service operations by a single applicant in a given area. The assignment of an additional frequency or pair of frequencies will be made only upon a satisfactory showing of need, except that:

(1) Additional frequencies above 25 MHz may be assigned in connection with operation of mobile repeaters in accordance with § 90.247, notwithstanding this limitation.

(2) Frequencies in the ranges 30.56-30.57 MHz, 35.00-35.01 MHz, 35.99-36.00 MHz and 37.00-37.01 MHz are available for assignment to applicants in this service subject to the provisions of subpart Q notwithstanding this limitation.

(3) Authorization for more than one mobile frequency in the band 72-76 MHz will be issued notwithstanding this limitation.

(4) Frequencies in the 25-50 MHz, 150-170 MHz, and 450-512 MHz bands, and the frequency bands 903-904 MHz, 904-912 MHz, 918-926 MHz, and 926-927 MHz may be assigned for the operation of Automatic Vehicle Monitoring (AVM) systems in accordance with § 90.239, notwithstanding this limitation.

(5) This limitation shall not apply to paragraph (d)(1) of this section.

(g) *Limitation on itinerant operation.* Base or mobile stations being utilized in itinerant operation will be authorized only on base or mobile frequencies designated for itinerant operation under § 90.73(d)(4).

(Secs. 4(i) and 303(r), Communications Act of 1934, as amended, §§ 0.131 and 0.331 of the Commission's Rules and 5 U.S.C. 553 (b)(3)(B) and (d)(3); 47 U.S.C. 154(i) and 303)

[43 FR 54791, Nov. 22, 1978]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 90.73, see the List of CFR Sections Affected in the Finding Aids section of this volume.

§ 90.75 Business Radio Service.

(a) *Eligibility.* Persons primarily e gaged in any of the following activi are eligible to hold authorizations the Business Radio Service to oper stations for transmission of commu cations necessary to such activities the licensee:

(1) The operation of a commerc activity.

(2) The operation of education philanthropic, or ecclesiastical insti tions.

(3) Clergymen activities

(4) The operation of hospitals, c ics or medical associations.

(b) *Frequencies available.* The lowing table indicates frequenc available for assignment to stations the Business Radio Service toget with the class of station(s) to wh they are normally assigned, and specific assignment limitations, wh are explained in paragraph (c) of t section.

Business Radio Service Frequency Tab

Frequency or band	Class of station(s)	Limita
Megahertz:		
27.43	Base or mobile	
27.45	do	
27.47	do	
27.49	do	
27.51	Mobile	
27.53	do	
30.76	Base or mobile	
30.80	do	
30.84	Mobile	
30.88	Base or mobile	
30.92	do	
30.96	do	
31.00	do	
31.04	do	
31.16	do	
31.20	do	
31.24	do	
33.14	Mobile	
33.16	Base or mobile	
33.40	Mobile	
35.02	do	4
35.04	Base or mobile	
35.06	do	
35.08	do	
35.10	do	
35.12	do	
35.14	do	
35.18	do	
35.70	do	
35.72	do	
35.88	do	
35.90	do	
35.92	do	
35.94	do	
35.96	do	
35.98	do	

Business Radio Service Frequency Table—Continued

Frequency or band	Class of station(s)	Limitations
42.96	do	1, 2
42.98	Mobile	4, 22
43.00	Base or mobile	1, 2
72 to 76	Operational fixed	7
150-170	Base or mobile	24
150.815	do	8
150.830	Base	8, 10, 12
150.845	Base or mobile	8
150.860	do	8
150.875	do	8
150.890	do	8
150.905	do	8
150.920	Base	8, 10, 12
150.935	Base or mobile	8
150.950	do	8
150.965	do	8
150.995	do	8
151.010	do	8
151.025	do	8
151.040	do	8
151.055	do	8
151.070	Base	8, 10, 12
151.085	Base or mobile	8
151.100	do	8
151.115	do	8
151.130	do	8
151.145	do	8
151.160	do	8
151.175	do	8
151.190	Base	8, 10, 12
151.205	Base or mobile	8
151.220	do	8
151.235	do	8
151.250	do	8
151.265	do	8
151.280	do	8
151.295	do	8
151.310	Base	8, 10, 12
151.325	Base or mobile	8
151.340	do	8
151.355	do	8
151.370	do	8
151.385	do	8
151.400	do	8
151.415	do	8
151.430	do	8
151.445	do	8
151.460	do	8
151.475	do	8
151.625	do	1, 3
151.655	do	1, 2
151.685	do	1, 2
151.715	do	1, 2
151.745	do	1, 2
151.775	do	1, 2
151.805	do	1, 2
151.835	do	1, 2
151.865	do	1, 2
151.895	do	1, 2
151.925	do	
151.955	do	
152.300	do	9
152.315	do	1, 9
152.345	do	1, 9
152.360	do	9
152.375	do	1, 9
152.405	do	1, 9
152.420	do	9
152.480	Base	10, 11, 12
154.45625	Mobile	18, 19, 36
154.46375	do	18, 19, 35, 37
154.47125	do	18, 19, 35
154.47875	do	18, 19, 36
154.515	Base or mobile	1, 2
154.540	do	1, 2
154.570	Mobile	4, 13, 22, 38
154.600	do	4, 14, 22, 38
154.625	Base	10, 11, 15
157.560	Base or mobile	9
157.575	Mobile	1, 9
157.605	Mobile	1, 9
157.620	Base or mobile	9
157.635	Mobile	1, 9
157.665	Mobile	1, 9
157.680	do	9
157.740	Base	10, 11, 12
158.460	do	10, 11, 12, 15
169 to 172	Mobile, operational fixed.	17
173.20375	Mobile	18, 19, 35
173.2100	do	18, 20, 35
173.2375	do	18, 19, 36
173.2625	do	18, 19, 36
173.2875	do	18, 19, 36
173.3125	do	18, 19, 36
173.3375	do	18, 19, 36
173.3625	do	18, 19, 36
173.3900	do	18, 20, 35
173.39625	do	18, 19, 35
216 to 220	Base or mobile	21
406 to 413	Operational fixed	17
457.525	Mobile	4, 14, 22, 23
457.550	do	4, 14, 22, 23
457.575	do	4, 14, 22, 23
457.600	do	4, 14, 22, 23
460.650	Base or mobile	2, 15, 25, 26
460.675	do	2, 15, 25, 26
460.700	do	2, 15, 25, 26
460.725	do	2, 15, 25, 26
460.750	do	2, 15, 25, 26
460.775	do	2, 15, 25, 26
460.800	do	2, 15, 25, 26
460.825	do	2, 15, 25, 26
460.850	do	2, 15, 25, 26
460.875	do	2, 15, 25, 26
460.900	do	1, 2, 27, 39, 40
460.925	do	1, 2, 27, 39, 40
460.950	do	1, 2, 27, 39, 40
460.975	do	1, 2, 28, 39, 40
461.000	do	1, 2, 28, 39, 40
461.025	do	1, 2, 26
461.050	do	1, 2, 26
461.075	do	1, 2, 26
461.100	do	1, 2, 26
461.125	do	1, 2, 26
461.150	do	1, 2, 26
461.175	do	1, 2, 26
461.200	do	1, 2, 26
461.225	do	1, 2, 26
461.250	do	1, 2, 26
461.275	do	1, 2, 26
461.300	do	1, 2, 26
461.325	do	1, 2, 26
461.350	do	1, 2, 26
461.375	do	1, 2, 26
461.400	do	1, 2, 26
461.425	do	1, 2, 26
461.450	do	1, 2, 26

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Business Radio Service Frequency Table—Continued

Frequency or band	Class of station(s)	Limitations
461.475	do	1, 2, 26
461.500	do	1, 2, 26
461.525	do	1, 2, 26
461.550	do	1, 2, 26
461.575	do	1, 2, 26
461.600	do	1, 2, 26
461.625	do	1, 2, 26
461.650	do	1, 2, 26
461.675	do	1, 2, 26
461.700	do	1, 2, 26
461.725	do	1, 2, 26
461.750	do	1, 2, 26
461.775	do	1, 2, 26
461.800	do	1, 2, 26
461.825	do	1, 2, 26
461.850	do	1, 2, 26
461.875	do	1, 2, 26
461.900	do	1, 2, 26
461.925	do	1, 2, 26
461.950	do	1, 2, 26
461.975	do	1, 2, 26
462.000	do	1, 2, 26
462.025	do	1, 2, 26
462.050	do	1, 2, 26
462.075	do	1, 2, 26
462.100	do	1, 2, 26
462.125	do	1, 2, 26
462.150	do	1, 2, 26
462.175	do	1, 2, 26
462.750	Base	10
462.775	do	10
462.800	do	10
462.825	do	10
462.850	do	10
462.875	do	10
462.900	do	10
462.925	do	10
463.200	Base or mobile	1, 2, 26
463.225	do	1, 2, 26
463.250	do	1, 2, 26
463.275	do	1, 2, 26
463.300	do	1, 2, 26
463.325	do	1, 2, 26
463.350	do	1, 2, 26
463.375	do	1, 2, 26
463.400	do	1, 2, 26
463.425	do	1, 2, 26
463.450	do	1, 2, 26
463.475	do	1, 2, 26
463.500	do	1, 2, 26
463.525	do	1, 2, 26
463.550	do	1, 2, 26
463.575	do	1, 2, 26
463.600	do	1, 2, 26
463.625	do	1, 2, 26
463.650	do	1, 2, 26
463.675	do	1, 2, 26
463.700	do	1, 2, 26
463.725	do	1, 2, 26
463.750	do	1, 2, 26
463.775	do	1, 2, 26
463.800	do	1, 2, 26
463.825	do	1, 2, 26
463.850	do	1, 2, 26
463.875	do	1, 2, 26
463.900	do	1, 2, 26
463.925	do	1, 2, 26
463.950	do	1, 2, 26
463.975	do	1, 2, 26

Business Radio Service Frequency T—Continued

Frequency or band	Class of station(s)	Li
464.000	do	
464.025	do	
464.050	do	
464.075	do	
464.100	do	
464.125	do	
464.150	do	
464.175	do	
464.200	do	
464.225	do	
464.250	do	
464.275	do	
464.300	do	
464.325	do	1,
464.350	do	
464.375	do	1,
464.400	do	
464.425	do	1,
464.450	do	
464.475	do	1,
464.500	do	
464.525	do	1,
464.550	do	
464.575	do	1,
464.600	do	
464.625	do	
464.650	do	
464.675	do	1,
464.700	do	
464.725	do	
464.750	do	
464.775	do	1,
464.800	do	
464.825	do	1,
464.850	do	
464.875	do	1,
464.900	do	
464.925	do	1,
464.950	do	
464.975	do	1,
465.000	Base	
465.650	Mobile	2, 4,
465.675	do	2, 4,
465.700	do	2, 4,
465.725	do	2, 4,
465.750	do	2, 4,
465.775	do	2, 4,
465.800	do	2, 4,
465.825	do	2, 4,
465.850	do	2, 4,
465.875	do	2, 4,
465.900	do	1,
465.925	do	1,
465.950	do	1,
465.975	do	1,
466.000	do	1,
466.025	do	
466.050	do	
466.075	do	
466.100	do	
466.125	do	
466.150	do	
466.175	do	
466.200	do	
466.225	do	
466.250	do	
466.275	do	
466.300	do	
466.325	do	

Business Radio Service Frequency Table—Continued

Frequency or band	Class of station(s)	Limitations
466.350	do	1, 2, 26
466.375	do	1, 2, 26
466.400	do	1, 2, 26
466.425	do	1, 2, 26
466.450	do	1, 2, 26
466.475	do	1, 2, 26
466.500	do	1, 2, 26
466.525	do	1, 2, 26
466.550	do	1, 2, 26
466.575	do	1, 2, 26
466.600	do	1, 2, 26
466.625	do	1, 2, 26
466.650	do	1, 2, 26
466.675	do	1, 2, 26
466.700	do	1, 2, 26
466.725	do	1, 2, 26
466.750	do	1, 2, 26
466.775	do	1, 2, 26
466.800	do	1, 2, 26
466.825	do	1, 2, 26
466.850	do	1, 2, 26
466.875	do	1, 2, 26
466.900	do	1, 2, 26
466.925	do	1, 2, 26
466.950	do	1, 2, 26
466.975	do	1, 2, 26
467.000	do	1, 2, 26
467.025	do	1, 2, 26
467.050	do	1, 2, 26
467.075	do	1, 2, 26
467.100	do	1, 2, 26
467.125	do	1, 2, 26
467.150	do	1, 2, 26
467.175	do	1, 2, 26
467.750	do	4, 13, 22, 23
467.775	do	4, 13, 22, 23
467.800	do	4, 13, 22, 23
467.825	do	4, 13, 22, 23
467.850	do	4, 13, 22
467.875	do	4, 13, 22
467.900	do	4, 13, 22
467.925	do	4, 13, 22
468.200	do	1, 2, 26
468.225	do	1, 2, 26
468.250	do	1, 2, 26
468.275	do	1, 2, 26
468.300	do	1, 2, 26
468.325	do	1, 2, 26
468.350	do	1, 2, 26
468.375	do	1, 2, 26
468.400	do	1, 2, 26
468.425	do	1, 2, 26
468.450	do	1, 2, 26
468.475	do	1, 2, 26
468.500	do	1, 2, 26
468.525	do	1, 2, 26
468.550	do	1, 2, 26
468.575	do	1, 2, 26
468.600	do	1, 2, 26
468.625	do	1, 2, 26
468.650	do	1, 2, 26
468.675	do	1, 2, 26
468.700	do	1, 2, 26
468.725	do	1, 2, 26
468.750	do	1, 2, 26
468.775	do	1, 2, 26
468.800	do	1, 2, 26
468.825	do	1, 2, 26
468.850	do	1, 2, 26
468.875	do	1, 2, 26
468.900	do	1, 2, 26
468.925	do	1, 2, 26
468.950	do	1, 2, 26
468.975	do	1, 2, 26
469.000	do	1, 2, 26
469.025	do	1, 2, 26
469.050	do	1, 2, 26
469.075	do	1, 2, 26
469.100	do	1, 2, 26
469.125	do	1, 2, 26
469.150	do	1, 2, 26
469.175	do	1, 2, 26
469.200	do	1, 2, 26
469.225	do	1, 2, 26
469.250	do	1, 2, 26
469.275	do	1, 2, 26
469.300	do	1, 2, 26
469.325	do	1, 2, 26
469.350	do	1, 2, 26
469.375	do	1, 2, 26
469.400	do	1, 2, 26
469.425	do	1, 2, 26
469.450	do	1, 2, 26
469.475	do	1, 2, 26
469.500	do	3, 30
469.525	do	1, 2, 26
469.550	do	3, 30
469.575	do	1, 2, 26
469.600	do	1, 26
469.625	do	1, 26
469.650	do	1, 26
469.675	do	1, 2, 26
469.700	do	1, 26
469.725	do	1, 26
469.750	do	1, 26
469.775	do	1, 2, 26
469.800	do	1, 2, 26
469.825	do	1, 2, 26
469.850	do	1, 2, 26
469.875	do	1, 2, 26
469.900	do	1, 2, 26
469.925	do	1, 2, 26
469.950	do	1, 2, 26
469.975	do	1, 2, 26
470 to 512	Base or mobile	32
806 to 821	Mobile	33
851 to 866	Base or mobile	33
896 to 901	Mobile	33
928 and above	Operational-fixed	34
929 to 930	Base only	42
935 to 940	Base or mobile	33
1427 to 1435	Operational-fixed, base or mobile.	21
2450 to 2500	Base or mobile	43
10,550 to 10,680*	do	

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* The frequencies in the band 10.55–10.68 GHz are available for Digital Termination Systems and for associated internodal links in the Point-to-Point Microwave Radio Service. No new licenses will be issued under this subpart but current licenses will be renewed.

(c) Explanation of assignment limitations appearing in the frequency table of paragraph (b) of this section:

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(1) Operation on this frequency is limited to a maximum output power of 110 watts.

(2) This frequency will be assigned only for operation in a permanent area, normally within 120 km (75 mi.) of a specified reference point.

(3) This frequency will be assigned only to stations used in itinerant operations, except within 35 miles (56 km.) of Detroit, MI, where it may be assigned for either itinerant or permanent area operations (i.e., general use).

(4) Operation on this frequency is limited to a maximum output power of 2 watts; and each station authorized will be classified and licensed as a mobile station. Any units of such a station, however, may provide the operational functions of a base or fixed station on a secondary basis to mobile service operations, *Provided*, That the separation between the control point and the center of the radiating portion of the antenna of any units so used does not exceed 8 m (25 ft.).

(5) This frequency is also available in the Special Emergency Radio Service for low power paging use on a coequal basis.

(6) Operation on this frequency is limited to a maximum output power of 1 watt and each station authorized will be classified and licensed as a mobile station. Any units of such a station, however, may provide the operational functions of a base of fixed station on a secondary basis to mobile service operations, *Provided*, That the separation between the control point and the center of the radiating portion of the antenna of any units so used does not exceed 8 m (25 ft.).

(7) The frequencies available in the band 72-76 MHz are listed in § 90.257(a)(1). These frequencies are shared with other services and are available only in accordance with the provisions of § 90.257.

(8) Use of this frequency in this service in limited to stations located in Puerto Rico and the Virgin Islands.

(9) This frequency is shared with Taxicab Radio Service and is available for assignment in the Business Radio Service only to stations which are used exclusively in areas outside of Standard Metropolitan Statistical Areas of 50,000 or more population (Census). Operations on this frequ are on a secondary basis to opera in the Taxicab Radio Service.

(10) This frequency is assigned for one-way paging communicatio mobile receivers. Only A1D, A2D, F1D, F2D, F3E, or G3E emissions be authorized.

(11) This frequency is also avai for base or mobile stations in the cial Industrial and Forest Proc Radio Services on a secondary ba paging operations in the Busi Radio Service.

(12) This frequency will not b signed to stations for use at tempo locations.

(13) This frequency may be used mobile operation for radio remote trol and telemetering functions. A2D, F1D, or F2D emission may b thorized and mobile stations use control remote objects or devices be operated on the continuous ca transmit mode.

(14) This frequency may be used mobile operation for remote co and telemetering functions. A1D, F1D, or F2D emission may be aut ized. The use of the continuous ca transmit mode for these purpose permitted only for stations author and continuously licensed since be May 21, 1971.

(15) Except as noted in parag (c)(25), operation on this frequen limited to a maximum output pow 20 watts.

(16) Operation on this frequenc limited to a maximum output powe 75 watts.

(17) Frequencies in this band wil assigned only for transmitting hy logical or meteorological data or low power wireless microphones in cordance with the provisions § 90.265.

(18) This frequency is available shared basis with other Indus Radio Services as follows: Po Forest Products, Special Indust Petroleum, Manufacturers, Busin and the Local Government R Service and may be used in this ser only for the purpose of remote con and telemetering.

(19) For FM transmitters the sum the highest modulating frequency

the amount of frequency deviation may not exceed 2.8 kHz and the maximum frequency deviation may not exceed 2.5 kHz. For AM transmitters the highest modulating frequency may not exceed 2.0 kHz. The carrier frequency must be maintained within 0.0005 percent and the authorized bandwidth may not exceed 6 kHz.

(20) For FM transmitters the sum of the highest modulating frequency and the amount of frequency deviation may not exceed 1.7 kHz, and the maximum frequency deviation may not exceed 1.2 kHz. For AM transmitters the highest modulating frequency may not exceed 1.5 kHz. The carrier frequency must be maintained within 0.0005 percent and the authorized bandwidth may not exceed 3 kHz.

(21) This frequency band is available to stations in this service subject to the provisions of § 90.259.

(22) This frequency may not be used aboard aircraft in flight.

(23) Frequencies subject to this assignment limitation are herein considered collectively for use for communications concerned with cargo handling from a dock, or a cargo handling facility, to a vessel alongside. Any number of the frequencies may be authorized to one licensee for the purpose. Mobile relay stations may be temporarily installed at or in the vicinity of a dock or cargo handling facility and used when a vessel is alongside the dock or cargo handling facility.

Mobile Relay (MHz)	*Mobile (MHz)*
457.525	467.750
457.550	467.775
457.575	467.800
457.600	467.825

For single frequency simplex: Use mobile relay frequencies. The effective radiated power (ERP) on any frequency shall not exceed 2 watts. The center of the radiating system of the onboard repeater antenna shall be located no more than 3 m (10 ft.) above the vessel's highest working deck.

(24) Rules concerning the use of this band for narrowband operations are set forth in § 90.271.

(25) Except as noted in paragraph (c)(25)(vii) of this section, this frequency is available for assignment to stations located on or near airports listed in paragraph (c)(25)(viii) of this section, and may be assigned only to persons engaged in furnishing commercial air transportation service, or to a corporation or association for the purpose of furnishing radio communications service to persons so engaged in accordance with the shared use provisions of § 90.179 of the rules. Stations on this frequency may be used only in connection with the servicing and supplying of aircraft at the listed airports. Common frequency signal boosters may be employed in accordance with the following criteria:

(i) The amplified signal is retransmitted only on the exact frequency of the originating base station.

(ii) The booster is equipped with automatic gain control circuitry which will limit the total output of the booster to 500 milliwatts under all conditions.

(iii) All such devices are installed with sufficient isolation between receiving and retransmitting circuits to prevent oscillation.

(iv) The power of any emission except on frequencies within the 460.6375-460.8875 MHz band or on which there is an input signal to the booster, shall be attenuated at least 35 decibels below the total power output of the booster.

(v) In the event control of the booster is impaired due to its activation by signals other than those intended by the licensee to be retransmitted, the licensee shall provide the booster with means of control such that it will be activated only by signals intended to be retransmitted, and boosters so provided with such means of control shall also be provided with an automatic time-delay or clock device which will deactivate the booster not more than 3 minutes after its activation.

(vi) If signal boosters are to be used in conjunction with other facilities, the number of such boosters must be stated on the license application.

(vii) This frequency is available for assignment to stations in the Business Radio Service for use at locations removed by 80 or more km (50 or more mi.) from the reference coordinates of the airports listed below at a maximum effective radiated power (ERP) of 300 watts. This frequency may also be assigned to low power (2 watts or less transmitter output power) stations in the Business Radio Service for use in areas removed by 16 or more km (10 or more mi.) from the reference coordinates of airports listed below. All such low power use is restricted to the confines of an industrial complex or manufacturing yard area. Business Radio Service stations first licensed prior to April 17, 1986 may continue to operate with facilities authorized as of that date. All Business Radio Service stations on this frequency may operate only on a non-interference basis to the co-channel facilities of air carriers located on or near the airports specified below.

(viii) The airports and their respective reference coordinates are:

City and airport	Reference coordinates	
	Latitude	Longitude
Akron, OH:		
Akron-Canton Regional (CAK).	40°55'01" N	81°26'30" W
Albany-Troy - Schenectady, NY :		
Albany County (ALB)	42°44'53" N	73°48'12" W
Albuquerque, NM:		
Albuquerque International (ABQ).	35°02'30" N	106°36'23" W
Allentown-Bethlehem, PA:		
Allentown-Bethlehem-Easton (ABE).	40°39'11" N	75°26'25" W
Anchorage, AK:		
Anchorage International (ANC).	61°10'30" N	149°59'38" W
Atlanta, GA:		
Atlanta International (ATL).	33°38'25" N	84°25'37" W
Dekalb-Peachtree (PDK).	33°52'30" N	84°18'08" W
Fulton County (FTY)	33°46'45" N	84°31'17" W
Baltimore, MD:		
Baltimore-Washington Int'L (BWI).	39°10'30" N	76°40'10" W
Birmingham, AL:		
Birmingham Municipal (BHM).	33°33'50" N	86°45'16" W
Boston, MA:		
Logan International (BOS).	42°21'51" N	71°00'21" W
Bridgeport, CT:		
Sikorsky Memorial (BDR).	41°09'49" N	73°07'35" W
Buffalo, NY:		
Greater Buffalo Int'l (BUF).	42°56'26" N	78°43'57" W
Canton, OH:		
Akron-Canton Regional (CAK).	40°55'01" N	81°26'30" W
Charlotte, NC:		
Charlotte-Douglas Int'l (CLT).	35°12'52" N	80°56'37" W

City and airport	Reference coordinat	
	Latitude	Longi
Chattanooga, TN:		
Lovell (CHA)	35°02'07" N	85°12'15"
Chicago, IL-Northwest, IN:		
Chicago-Wheeling-Palwaukee (PWK).	42°06'48" N	87°54'03"
Meigs (CGX)	41°51'32" N	87°36'28"
Michiana Regional (SBN).	41°42'18" N	86°18'59"
Midway (MDW)	41°47'10" N	87°45'08"
O'Hare International (ORD).	41°58'48" N	87°54'16"
West Chicago-Dupage (DPE).	41°54'52" N	88°14'47"
Cincinnati, OH:		
Greater Cincinnati Int'l (CVG).	39°14'59" N	84°23'14
Lunken (LUK)	39°06'12" N	84°25'08
Cleveland, OH:		
Burke Lakefront (BKL)	41°31'03" N	81°41'01
Cuyahoga County (CGF).	41°33'54" N	81°29'11
Hopkins International (CLE).	41°24'38" N	81°50'5
Columbus, OH:		
Port Columbus Int'l (CMH).	39°59'42" N	82°53'11
Dallas, TX:		
Addison (ADS)	32°58'06" N	96°50'10
Dallas-Ft. Worth Regional (DFW).	32°53'45" N	97°02'10
Dallas-Love Field (DAL).	32°50'49" N	96°51'0
Red Bird (RBD)	32°40'49" N	96°52'0
Davenport, IA (Rock Island, Moline, IL):		
Davenport Municipal (DVN).	41°36'42" N	90°35'2
Quad City (MLI)	41°26'56" N	90°30'3
Dayton, OH:		
Dayton International (DAY).	39°54'04" N	84°13'1
Denver, CO:		
Centennial (APA)	39°34'19" N	104°50'
Colorado Springs Municipal (COS).	38°48'31" N	104°42'
Denver-Jeffco (BJC)	39°54'28" N	105°26'
Stapleton International (DEN).	39°46'22" N	104°52
Des Moines, IA:		
Des Moines Municipal (DSM).	41°32'06" N	93°39'
Detroit, MI:		
Detroit City (DET)	42°24'33" N	83°00'
Detroit Metro-Wayne County (DTW).	42°12'55" N	83°20'
Oakland-Pontiac (PTK).	42°38'54" N	83°25'
Willow Run (YIP)	42°14'16" N	83°31'
El Paso, TX:		
El Paso International (ELP).	31°48'24" N	106°2
Flint, MI:		
Bishop (FNT)	42°57'56" N	83°44'
Ft. Lauderdale-Hollywood, FL:		
Ft. Lauderdale Executive (FXE).	26°11'49" N	80°10'
Ft. Lauderdale-Hollywd Int'l (FLL).	26°04'19" N	80°09

City and airport	Reference coordinates	
	Latitude	Longitude
Ft. Worth, TX:		
Meacham (FTW)	32°49'09" N	97°21'41" W
Fresno, CA:		
Chandler Downtown (FCH).	36°43'56" N	119°49'08" W
Fresno Air Terminal (FAT).	36°46'36" N	119°43'02" W
Grand Rapids, MI:		
Kent County Int'l (GRR).	42°52'57" N	85°31'26" W
Hana, HI:		
Hana (HNN)	20°47'56" N	156°01'02" W
Harrisburg, PA:		
Capital City (CXY)	40°13'01" N	76°51'06" W
Harrisburg Int'l (MDT)	40°11'36" N	76°45'49" W
Hartford, CT (Windsor Locks):		
Bradley Int'l (BDL)	41°56'20" N	72°41'01" W
Hartford-Brainard (HFD).	41°44'10" N	72°39'02" W
Hilo, HI:		
General Lyman Field (ITO).	19°43'24" N	155°03'05" W
Honolulu, HI:		
Honolulu International (HNL).	21°19'20" N	157°55'27" W
Houston, TX:		
W.P. Hobby (HOU)	29°38'43" N	95°16'43" W
D.W. Hooks Memorial (DWH).	30°03'50" N	95°33'11" W
Houston Intercontinental (IAH)	29°58'55" N	95°20'45" W
Indianapolis, IN:		
Indianapolis Int'l (IND)	39°43'32" N	86°17'02" W
Jacksonville, FL:		
Craig Municipal (CRG)	30°20'10" N	81°30'53" W
Jacksonville Int'l (JAX)	30°29'33" N	81°41'24" W
Kahului, HI:		
Kahului (OGG)	20°54'07" N	156°25'59" W
Kailua-Kona, HI:		
Ke-Ahole (KOA)	19°44'08" N	156°25'06" W
Kamuela, HI:		
Waimea-Kohala (MUE).	20°00'16" N	155°40'15" W
Kansas City, MO-KS:		
Fairfax Municipal (KCK).	39°08'50" N	94°56'14" W
Kansas City Int'l (MCI)	39°17'57" N	94°43'04" W
Kansas City Municipal Dntn (MKC).	39°07'24" N	94°35'33" W
Richard-Gebaur (GBW).	38°50'37" N	94°33'37" W
Kauna Kakai, HI:		
Molokai (MKK)	21°09'22" N	157°55'07" W
Las Vegas, NV:		
McCarran INt'l (LAS)	36°04'58" N	115°09'13" W
Lihue, HI:		
Lihue (LIH)	21°58'42" N	159°20'40" W
Los Angeles, CA:		
Burbank-Glendale-Pasadena (BUR).	34°21'02" N	118°21'27" W
Catalina (AVX)	33°24'20" N	118°24'50" W
Long Beach-Daugherty Field (LGB).	33°49'03" N	118°09'03" W
Los Angeles Int'l (LAX).	33°56'33" N	118°24'26" W
Ontario Int'l (ONT)	34°03'22" N	117°36'11" W
Santa Ana-John Wayne-Orange City (SNA).	33°40'32" N	117°52'02" W
Louisville, KY:		
Standiford Field (SDF)	38°10'40" N	85°44'11" W
Memphis, TN:		
Memphis Int'l (MEM)	35°02'59" N	89°58'43" W
Miami, FLA:		
Miami Int'l (MIA)	25°47'34" N	80°17'26" W
Opa Locka (OPF)	25°54'25" N	80°16'50" W
Tamiami (TMB)	25°38'51" N	80°25'59" W
Milwaukee, WI:		
General Mitchell (MKE).	42°56'49" N	87°53'49" W
Minneapolis-St. Paul, MN:		
Minneapolis-St. Paul (MSP).	44°53'03" N	93°12'54" W
Mobile, AL:		
Bates Field (MOB)	30°41'23" N	88°14'31" W
Nashville, TN:		
Nashville Metropolitan (BNA).	36°07'37" N	86°40'53" W
New Haven, CT:		
Tweed-New Haven Municipal (HVN).	41°15'50" N	72°53'15" W
New Orleans, LA:		
Lakefomt (NEW)	30°02'33" N	90°01'41" W
New Orleans Int'l (MSY).	29°59'34" N	90°15'23" W
Newport News-Hampton, VA:		
Patrick Henry Int'l (PHF).	37°07'54" N	76°29'36" W
New York-Northeast, NJ:		
Farmingdale Republic (FRG).	40°43'43" N	73°24'50" W
JFK International (JFK).	40°38'25" N	73°48'42" W
LaGuardia (LGA)	40°46'38" N	73°52'27" W
Long Island-McArthur (ISP).	40°47'44" N	73°06'00" W
Morristown Municipal (NJ) (MMU).	40°47'57" N	74°24'55" W
Newark Int'l (FWR)	40°41'35" N	74°10'07" W
Teterboro (NJ) (TEB)	40°51'00" N	74°03'41" W
Norfolk-Portsmouth, VA:		
Norfolk Int'l (ORF)	36°53'40" N	76°12'06" W
Oklahoma City, OK:		
Wiley Post (DWA)	35°32'03" N	97°38'48" W
Will Rogers World (OKC).	35°23'35" N	97°36'02" W
Omaha, NE:		
Eppley Airfield (OMA)	41°18'04" N	95°53'36" W
Orlando, FL:		
Orlando Executive (ORL)	28°32'43" N	81°19'59" W
Orlando Int'l (MCO)	28°25'54" N	81°19'29" W
Philadelphia, PA–NJ:		
Northeast Philadelphia (PNE).	40°04'55" N	75°00'40" W
Philadelphia Int'l (PHC).	39°52'13" N	75°14'43" W
Phoenix, AZ:		
Phoenix-Sky Habor Int'l (PHX).	33°26'10" N	112°00'32" W
Scottsdale Municipal (SDC).	33°37'22" N	111°54'35" W

City and airport	Reference coordinates	
	Latitude	Longitude
Pittsburgh, PA:		
Allegheny County (AGC).	40°21'16" N	79°55'49" W
Greater Pittsburgh Int'l (PIT).	40°29'30" N	80°13'55" W
Portland, OR:		
Portland-Hillsboro (HIO).	45°32'26" N	122°56'55" W
Portland International (PDX).	45°35'20" N	122°35'47" W
Portland-Troutdale (TTD).	45°32'58" N	122°24'00" W
Providence-Pawtucket RI—MA:		
North Central State (SFZ).	41°55'15" N	71°29'30" W
T.F. Green State (PVD).	41°43'31" N	71°25'41" W
Reno, NV:		
Reno International (RNO).	39°29'52" N	119°46'04" W
Richmond, VA:		
Byrd International (RIC).	37°30'18" N	77°19'12" W
Rochester, NY:		
Rochester-Monroe County (ROC).	43°07'08" N	77°40'22" W
Sacramento, CA:		
Sacramento Executive (SAC).	38°30'45" N	121°29'33" W
Sacramento Metropolitan (SMF).	38°41'44" N	121°36'01" W
St. Louis, MO—IL:		
Spirit of St. Louis (SUS).	38°39'36" N	90°38'43" W
St. Louis-Lambert Int'l (STC).	38°44'51" N	90°21'39" W
St. Petersburg, FL:		
Albert Whitted Municipal (SPG).	27°45'53" N	82°37'39" W
Clearwater Int'l (PIE)	27°54'38" N	82°41'15" W
Salt Lake City, UT:		
Salt Lake City Int'l (SLC).	40°47'13" N	111°58'05" W
San Antonio, TX:		
San Antonio Int'l (SAT).	29°32'00" N	98°28'10" W
San Bernardino, CA:		
Ontario Int'l (ONT)	34°03'22" N	117°36'11" W
San Diego, CA:		
Lindbergh Int'l (SAN)	32°44'01" N	117°11'12" W
San Francisco-Oakland, CA:		
Metropolitan Oakland Int'l (OAK).	37°43'17" N	122°13'11" W
San Francisco Int'l (SFO).	37°37'08" N	122°22'26" W
San Jose, CA:		
San Jose Int'l (SJC)	37°21'41" N	121°55'38" W
Scranton, PA:		
Wilkes-Barre Scranton Int'l (AVP).	41°20'20" N	75°43'27" W
Seattle, WA:		
King County Int'l (BFI)	47°31'49" N	122°18'03" W
Seattle-Tacoma Int'l (SEA).	47°26'57" N	122°18'29" W
Shreveport, LA:		
Shreveport Downtown (DTN).	32°32'23" N	93°44'40" W
Shreveport Regional (SHV).	32°26'48" N	93°49'30" W
South Bend, IN:		
Michiana Regional (SBW).	41°42'16" N	86°18'59" W
Spokane, WA:		
Grant County (MWH)	47°12'28" N	119°19'08" W
Spokane Int'l (GEG)	47°37'12" N	117°31'59" W
Springfield, MA:		
Barnes Municipal (BAF).	42°09'28" N	72°42'58" W
Westover Field (CEF)	42°11'52" N	72°31'50" W
Syracuse, NY:		
Syracuse-Hancock Int'l (SYR).	43°06'44" N	76°06'32" W
Tacoma, WA:		
Tacoma Narrows (TIW).	47°16'05" N	122°34'37" W
Tampa, FL:		
Tampa Int'l (TPA)	27°58'31" N	82°32'00" W
Toledo, OH:		
Toledo Express (TOL)	41°35'15" N	83°48'18" W
Trenton, NJ-PA:		
Mercer County (TTN)	40°16'38" N	74°48'50" W
Tucson, AZ:		
Tucson Int'l (TUS)	32°07'06" N	110°56'36" W
Tulsa, OK:		
R.L. Jones, Jr. (RVS)	36°02'18" N	95°59'05" W
Tulsa Int'l (TUL)	36°11'54" N	95°53'16" W
Washington, DC:		
Dulles International (IAD).	38°56'39" N	77°27'26" W
National (DCA)	38°51'07" N	77°02'17" W
Wichita, KS:		
Mid-Continent (ICT)	37°39'00" N	97°25'58" W
Wilkes-Barre, PA:		
Wilkes-Barre-Scranton (AVP).	41°20'20" N	75°43'27" W
Wilmington, DE:		
Gr. Wilm.-New Castle City (ILG).	39°40'42" N	75°36'25" W
Worcester, MA:		
Worcester Municipal (ORH).	42°16'02" N	71°52'34" W
Youngstown-Warren, OH-PA:		
Youngstown Municipal (YNG).	41°15'32" N	80°40'34" W

(26) This frequency may be assigne to fixed stations in the Business Radi Service in accordance with the pro sions of § 90.261.

(27) Within the boundaries of urba ized areas of 200,000 or more popul tion, defined in the United State Census of Population, 1960, vol. table 23, page 1-50, this frequen may be used only by persons renderi a central station commercial prote tion service within the service area o the radio station utilizing the freque cy and may be used only for communi cations pertaining to safety of life an property, and for maintenance or tes ing of the protection facilities. Centr

tation commercial protection service s defined as an electrical protection nd supervisory service rendered to he public from and by a central staion accepted and certified by one or nore of the recognized rating agenies, or the Underwriters Laboratories' UL), or Factory Mutual System. Other stations in the Business Radio Service may be licensed on this freuency only when all base, mobile elay and control stations are located t least 75 miles from the city center r centers of the specified urbanized reas of 200,000 or more population. With respect to combination urbanzed areas containing more than one ity, 75-mile separation shall be mainained from each city center which is ncluded in the urbanized area. The loations of centers of cities are determined from appendix, page 226, of the J.S. Commerce publication "Air Line Distance Between Cities in the United States."

(28) This frequency may be assigned nly to persons rendering a central tation commercial protection service, which is defined at § 90.75(c)(27), within the service area of the radio station utilizing the frequency.

(29) This frequency will be assigned nly to stations whose control point ocation is within 805 m (½ mi. direct) f the transmitter location. Maximum ower output may not exceed 110 watts, and the overall height of the ntenna above ground may not exceed 0 m (100 ft.).

(30) Operation on this frequency is imited to a maximum output power of 5 watts.

(31) Maximum permissible power utput for stations on airports is 3 watts. Each station authorized on this requency will be classified and liensed as a mobile station. Any units f such a station, however, may proide the functions of a base station on secondary basis to mobile service oprations provided that the vertical sepration between the control point or round level and the center of the raiating portion of the antenna of any nits so used shall not exceed 8 m (25 t.).

(32) Subpart L contains rules for asignment of frequencies in the 470-512 MHz band.

(33) Subpart S contains rules for assignment of frequencies in the 806-821/851-866 and 896-901/935-940 MHz bands.

(34) Assignment of frequencies above 928 MHz for operational-fixed stations is governed by Part 94 of this chapter.

(35) The maximum output power of the transmitter may not exceed 1 watt. A1D, A2D, F1D, or F2D emission may be authorized.

(36) The maximum effective radiated power (ERP) may not exceed 2 watts. All operation is on a secondary basis to adjacent channel land mobile operations. All stations will be licensed as a mobile, however, such stations may be used to provide the operational functions of a base or fixed station. When performing such functions, the height of the antenna system may not exceed 15.24 m (50 feet) above ground.

(37) Use of this frequency is limited to stations located at least 120.7 km (75 miles) from the center of any urbanized area of 200,000 or more population (U.S. Census or Population 1970). Operation is on a secondary basis to that in the Power radio Service.

(38) This frequency may be used, with the transmitter carrier centered on the designated frequency or 5 kHz above or below the designated frequency, with P0N, F2B, or F2D emission, using a bandwidth of 5 kHz and a power not to exceed 1 watt peak power output.

(39) Persons who render a central station commercial protection service are authorized to operate fixed stations on this frequency for the transmission of tone or impulse signals on a secondary, noninterference base-to-base/mobile operations subject to the following conditions and limitations.

(i) Secondary fixed operations may be used only for the following purposes.

(A) Indication of equipment malfunction.

(B) Actuation of a device to indicate the presence of an intruder, fire, or other hazardous condition on the property under the protection of the licensee.

(C) Indication of an abnormal condition in facilities under the protection of the licensee that, if not promptly reported, would result in danger to human life.

(D) Transmission, as may be necessary, to verify status of equipment; adjust operating conditions; or correct any abnormal condition.

(E) Confirmation of status, or that an operation or correction has been accomplished.

(ii) The maximum duration of any one nonvoice signal may not exceed 2 seconds and shall not be transmitted more than three times.

(iii) Systems employing automatic interrogation shall be limited to nonvoice techniques and shall not be activated for this purpose more than 10 seconds out of any 60-second period. This 10-second frame includes both transmit and response times.

(iv) The bandwidth shall not exceed that authorized to the licensee for the primary operation on the frequency concerned.

(v) Frequency loading resulting from the use of secondary signaling will not be considered in whole or in part as a justification for authorizing additional frequencies in the licensee's mobile system.

(vi) A mobile service frequency may not be used exclusively for secondary signaling.

(vii) The output power shall not exceed 30 watts (at the remote site).

(viii) A1D, A2D, F1D, or F2D emission may be authorized.

(ix) The transmitter shall be designed to deactivate automatically after 3 minutes of continuous carrier radiation.

(x) Operational fixed stations authorized under this paragraph are exempt from the requirements of §§ 90.137(b), 90.429(d), 90.425 and 90.433.

(xi) On these frequencies, base, mobile relay or mobile stations may transmit secondary tone or impulse signals to receivers, as provided in this section.

(40) Licensees providing a central station commercial protection service may communicate with police or fire stations, or vehicles, on this frequency, and may install licensed transmitting units which operate on this frequency at police or fire stations, or in police or fire vehicles, if the frequency's
mary use is in a base/mobile sys
for a central station commercial
tection service.

(41) Stations authorized on this
quency prior to September 26,
will continue to be authorized
censed on their existing authoriza

(42) Frequencies in this band
available only for one-way paging
erations in accordance with § 90.494

(43) Frequencies in this band
available on a shared basis with
tions in other services, and subject
no protection from interfere
caused by the operation of industri
scientific, or medical (ISM) devices
the 2483.5-2500 MHz band, no appli
tions will be accepted for new statio
Stations in the 2483.5-2500 MHz ba
that were licensed as a result of
cations filed on or before July
1985, are grandfathered, and their
eration is co-primary with the Rad
determination Satellite Service.

(d) *Additional frequencies availab*
In addition to the frequencies sho
in the frequency table of this sectio
the following frequencies are availab
in this service. (See also § 90.253.)

(1) [Reserved]

(2) Frequencies in the band 73.0-7
MHz may be assigned to stations
thorized their use on or before Dece
ber 1, 1961, but no new station will
authorized in this band, nor will
pansion of existing systems be permi
ted. (See also § 90.257.)

(3) Licensees holding a valid autho
zation on January 1, 1973, to opera
on the frequencies 406.025, 406.0
MHz may continue to be authori
for such operations until the expi
tion of their present license on a
condary basis to stations operating
accordance with the table in § 2.106
this chapter.

(4) Low-power mobile stations of
mW or less output power may be
signed any frequency separated
12.5 kHz from a regularly assigned fr
quency in the bands 460.650-460.8
MHz and 465.650-465.875 MHz liste
in paragraph (b) of this section,
one-way, non-voice biomedical teleme
try operations in hospitals, or in med
cal or convalescent centers.

(5) Frequencies in the 421-430 MH
band are available in the Detroit

leveland, and Buffalo areas in ac-
rdance with the rules in §§ 90.273
rough 90.281.

(e) *Limitation on number of frequen-*
es assignable. Normally only one fre-
uency, or pair of frequencies in the
aired frequency mode of operation,
ill be assigned for mobile service op-
rations by a single applicant in a
ven area. The assignment of an addi-
onal frequency or pair of frequencies
ill be made only upon a satisfactory
owing of need, except that:

(1) Additional frequencies above 25
Hz may be assigned in connection
ith operation of mobile repeaters in
cordance with § 90.247, notwith-
anding this limitation.

(2) Frequencies in the ranges 30.56–
.57 MHz, 35.00–35.01 MHz, 35.99–
.00 MHz and 37.00–37.01 MHz are
ailable for assignment to applicants
this service subject to the provisions
subpart Q.

(3) Frequencies in the 457 and 467
Hz bands may be assigned collective-
as provided by paragraph (c)(23) of
is section notwithstanding this limi-
tion.

(4) Frequencies in the 25–50 MHz,
50-170 MHz, and 450–512 MHz bands,
d the frequencies bands 903-904
Hz, 904-912 MHz, 918–926 MHz, and
26-927 MHz may be assigned for the
eration of Automatic Vehicle Moni-
ring (AVM) systems in accordance
th § 90.239 notwithstanding this lim-
tion.

(f) *Limitation on itinerant oper-*
ion. Base or mobile stations being
ilized in itinerant operation will be
thorized only on base or mobile fre-
encies designated for itinerant oper-
ion under § 90.75(c)(3), or on other
equencies not designated for perma-
nt use.

ecs. 4(i) and 303(r), Communications Act
1934, as amended, §§ 0.131 and 0.331 of
e Commission's Rules and 5 U.S.C. 553
(3)(B) and (d)(3); 47 U.S.C. 154(i) and
3)

FR 54791, Nov. 22, 1978]

EDITORIAL NOTE: For FEDERAL REGISTER ci-
ions affecting § 90.75, see the List of CFR
ctions Affected in the Finding Aids sec-
n of this volume.

§ 90.79 Manufacturers Radio Service.

(a) *Eligibility.* Persons primarily engaged in any of the following manufacturing activities are eligible to hold authorizations in the Manufacturers Radio Service to operate radio stations for transmission of communications essential to such activities of the licensee:

(1) The mechanical or chemical transformation of substances into new products within such establishments as plants, factories, shipyards, or mills which employ, in that process, power-driven machines and materials-handling equipment.

(2) The assembly of components of manufactured products within such establishments as plants, factories, shipyards, or mills where the new product is neither a new structure nor other fixed improvement. Establishments primarily engaged in the wholesale or retail trade, or in service activities, even though they fabricate or assemble any or all the products or commodities handled, are not eligible in this service.

(3) The providing of supporting services or materials by a corporation to its parent corporation, to another subsidiary of its parent or to its own subsidiary, where such supporting services or materials are directly related to those regular activities of such parent or subsidiary which constitute the basis for eligibility in this service.

(b) *Special limitations on use.* The following limitations are applicable to the use of stations in this service:

(1) Authorized stations may be used only for the transmission of communications related to the operation of the plant, such as for security, production control or materials-handling. Communications related to the retail distribution of the licensees products are not permitted.

(2) Base station will only be authorized in this service for operation at specified and permanent locations.

(c) *Frequencies available.* The following table indicates frequencies available for assignment to stations in the Manufacturers Radio Service, together with the class of stations(s) to which they are normally assigned and the specific assignment limitations which are explained in paragraph (d) of this section:

Manufacturers Radio Service Frequency Table

Frequency or band	Class of station(s)	Limitations
Megahertz		
72-76	Operational fixed	25
72.02	Mobile	1, 2
72.04	do	1, 2
72.06	do	1, 2
72.08	do	1, 2, 3
72.10	do	1, 2
72.12	do	1, 2
72.14	do	1, 2
72.16	do	1, 2, 3
72.18	do	1, 2
72.20	do	1, 2
72.22	do	1, 2
72.24	do	1, 2, 3
72.26	do	1, 2
72.28	do	1, 2
72.30	do	1, 2
72.32	do	1, 2, 3
72.34	do	1, 2
72.36	do	1, 2
72.38	do	1, 2
72.40	do	1, 2, 3
72.44	do	2, 4
72.48	do	2, 4
72.52	do	2, 4
72.56	do	2, 4
72.60	do	2, 4
75.44	do	2, 4
75.48	do	2, 4
75.52	do	2, 4
75.56	do	2, 4
75.60	do	2, 4
150-170	Base or mobile	23
153.050	do	5, 21, 22
153.065	do	5
153.080	do	5
153.095	do	5
153.110	do	5
153.125	do	5,21,22
153.140	do	5
153.155	do	5
153.170	do	5
153.185	do	5
153.200	do	5
153.215	do	5
153.230	do	5
153.245	do	5
153.260	do	5
153.275	do	5
153.290	do	5
153.305	do	5
153.320	do	5
153.335	do	5,21
153.350	do	5,21
153.365	do	5,21
153.380	do	5,21
153.395	do	5,21
154.45625	Fixed or mobile	6,9,10,19
154.46375	do	6,7,9,10,20
154.47125	do	6,7,9,10
154.47875	do	6,9,10,19
158.280	Base or mobile	5
158.295	do	5
158.310	do	5
158.325	do	5,21,22
158.415	do	5,21,22
158.430	do	5
169-172	Mobile	
173.20375	Fixed or mobile	
173.2100	do	
173.2375	do	
173.2625	do	
173.2875	do	
173.3125	do	
173.3375	do	
173.3625	do	
173.3900	do	
173.39625	do	
216-220	Base or mobile	
450-470	Fixed	
451.175	Base or mobile	
451.225	do	
451.275	do	
451.375	do	
451.425	do	
451.475	do	
451.525	do	
451.575	do	
451.625	do	
451.675	do	
456.175	Mobile	
456.225	do	
456.275	do	
456.375	do	
456.425	do	
456.475	do	
456.525	do	
456.575	do	
456.625	do	
456.675	do	
462.200	Base or mobile	
462.225	do	
462.250	do	
462.275	do	
462.300	do	
462.325	do	
462.350	do	
462.375	do	
462.400	do	
462.425	do	
462.450	do	
462.475	do	
462.500	do	
462.525	do	
467.200	Mobile	
467.225	do	
467.250	do	
467.275	do	
467.300	do	
467.325	do	
467.350	do	
467.375	do	
467.400	do	
467.425	do	
467.450	do	
467.475	do	
467.500	do	
467.525	do	
470 to 512	Base or mobile	
806 to 821	Mobile	
851 to 866	Base or mobile	
896 to 901	Mobile	
928 and above	Operational-fixed	
929 to 930	Base only	
935 to 940	Base or mobile	

Manufacturers Radio Service Frequency Table—Continued

Frequency or band	Class of station(s)	Limitations
Megahertz		
1427 to 1435	Operational fixed, base or mobile	11
2450 to 2500	Base or mobile	17
8400 to 8500	do	18
10,550 to 10,680*	do	

* The frequencies in the band 10.55–10.68 GHz are available for Digital Termination Systems and for associated intermodal links in the Point-to-Point Microwave Radio Services. No new licenses will be issued under this subpart but current licenses will be renewed.

(d) Explanation of assignment limitations appearing in the frequency tabulation of paragraph (c) of this section:

(1) This frequency is shared with fixed stations in other services and is subject to no protection from interference.

(2) All communications on this frequency must be conducted within the boundaries or confines of plant, factory, shipyards, mill, or other manufacturing area. All operations on this frequency are subject to the provisions of § 90.257(b).

(3) This frequency is shared with the Radio Control (R/C) Service, part of the Personal Radio Services, where it is used solely for the radio control of models.

(4) This frequency is available on a shared basis in the Manufacturers, Forest Products, Special Industrial, and Railroad Radio Services and interservice coordination is required. All communications must be within the boundaries or confines of plants, mills, yards, or other manufacturing areas. All operations on this frequency are subject to the provisions of § 90.257(b).

(5) This frequency is shared with the Forest Products and Petroleum Radio Services. The output power of transmitters operating on this frequency shall not exceed 110 watts.

(6) For FM transmitters the sum of the highest modulating frequency in hertz and the amount of frequency deviation or swing in hertz may not exceed 2800 Hz and the maximum frequency deviation may not exceed 2.5 kHz. For AM transmitters the highest modulating frequency may not exceed 3000 Hz. The carrier frequency must be maintained within 0.0005 percent of the center of the frequency band, and the authorized bandwidth may not exceed 6 kHz.

(7) On this frequency band the maximum power output of the transmitter may not exceed 50 watts for fixed stations and 1 watt for mobile stations. A1B, A2D, A2B, A2D, F1B, F1D, F2B, F2D, G1B, G1D, G2B or G2D emission may be authorized, and mobile stations used to control remote objects and devices may be operated in the continuous transmit mode.

(8) For FM transmitters the sum of the highest modulating frequency in hertz and the amount of frequency deviation or swing in hertz may not exceed 1700 Hz and the maximum deviation may not exceed 1.2 kHz. For AM transmitters the highest modulating frequency may not exceed 1200 Hz. The carrier frequency must be maintained within 0.0005 percent of the center of the freqency band, and the authorized bandwidth may not exceed 3 kHz.

(9) This frequency is available on a shared basis with other Industrial Radio Services as follows: Power, Forest Products, Special Industrial, Petroleum, Business, and the Local Government Radio Service and may be used in this service only for the purpose of remote control and telemetering.

(10) Operational fixed stations must employ directional antennas having a front-to-back ratio of at least 20 db. Omnidirectional antennas having unity gains may be employed for stations communicating with at least three receiving locations separated by 160° of azimuth.

(11) This frequency band is available to stations in this service subject to the provisions of § 90.259.

(12) The frequencies available for use at fixed stations in this band, and the requirements for assignment are set forth in § 90.261. Operation on these frequencies is on a secondary basis to stations in the Public Safety and Land Transportation Radio Services where they are assigned for land mobile operations.

(13) This frequency is available on a shared basis in the Power, Petroleum, Forest Products, Manufacturers, and Telephone Maintenance Radio Serv-

ices. It may be assigned only when all of the frequencies in the 450-470 MHz band allocated to the service in which the applicant is primarily eligible are assigned within 56 km. (35 mi) of the proposed base station.

(14) Subpart L contains rules for assignment of frequencies in the 470-512 MHz band.

(15) Subpart S contains rules for assignment of frequencies in the 806-821/851-866 and 896-901/935-940 MHz bands.

(16) Assignment of frequencies above 928 MHz for operational-fixed stations is governed by part 94 of this chapter.

(17) Available only on a shared basis with stations in other services, and subject to no protection from interference due to the operation of industrial, scientific, or medical (ISM) devices. In the 2483.5-2500 MHz band, no applications for new or modification to existing stations to increase the number of transmitters will be accepted. Existing licensees as of July 25, 1985, or on a subsequent date following as a result of submitting an application for license on or before July 25, 1985, are grandfathered and their operation is co-primary with the Radiodetermination Satellite Service.

(18) Use of this frequency band is limited to developmental operation and is subject to the provisions of subpart Q.

(19) The maximum effective rediated power (ERP) may not exceed 20 watts for fixed stations and 2 watts for mobile stations and the height of the antenna system may not exceed 15.24 meters (50 feet) above ground. All such operation is on a secondary basis to adjacent channel land mobile operations.

(20) Use of this frequency is limited to stations located at least 120.7 km (75 miles) from the center of any urbanized area of 200,000 or more population (U.S Census of Population, 1970). Operation is on a second any basis to that in the Power Radio Service.

(21) This frequency is shared with the Special Industrial Radio Service in the States of North Dakota; South Dakota; Iowa; Nebraska; Kansas and Missouri beyond 50 miles from St.
Louis and Kansas City; Colo
Wyoming east of Longitude
grees; and Minnesota south
tude 47 degrees.

(22) This frequency may
shared in the Special Industr
Service within 20 miles of the
Duluth, MN; Des Moines an
port, IA; Omaha, NE;
Springs, CO; and Wichita, KS.

(23) Rules concerning the u
band for narrowband opera
set forth in § 90.271.

(24) Frequencies in this
available only for one-way p
erations in accordance with §

(25) The frequencies avai
use at operational-fixed statio
band 72-76 MHz are l
§ 90.257(a)(1). These frequen
shared with other services
available only in accordance
provisions of § 90.257.

(26) Frequencies in this ban
assigned for low power wirele
phones in accordance with th
sions of § 90.265.

(e) *Additional frequencies a*
In addition to the frequencie
in the frequency table of this
the following frequencies are
in this service: (See also § 90.25

(1) Frequencies may be sub
for those available below 25
accordance with the provis
§ 90.263.

(2) [Reserved]

(3) Frequencies in the band
MHz may be assigned to stat
thorized their use on or before
ber 1, 1961, but no new station
authorized in this band, nor
pansion of existing systems be
ted. (See also § 90.257.)

(4) Frequencies in the 421-43
band are available in the
Cleveland, and Buffalo areas
cordance with the rules in §
through 90.281.

(f) *Limitation on number of f*
cies assignable. Normally only
quency or pair of frequencies
paired frequency mode of op
will be assigned for mobile ser
erations by a single applican
given area. The assignment of
tional frequency or pair of freq
will be made only upon a satis
showing of need, except that:

(1) Additional frequencies above 25 MHz may be assigned in connection with operation of mobile repeaters in accordance with § 90.247 notwithstanding this limitation.

(2) Frequencies in the ranges 30.56-30.57 MHz, 35.00-35.01 MHz, 35.99-36.00 MHz, and 37.00-37.01 MHz are available for assignment to applicants in this service subject to the provisions of subpart Q notwithstanding this limitation.

(3) Frequencies in the 25-50 MHz, 150-170 MHz, and 450-512 MHz bands, and the frequency bands 903-904 MHz, 904-912 MHz, 918-926 MHz, and 926-927 MHz may be assigned for the operation of Automatic Vehicle Monitoring (AVM) systems in accordance with § 90.239, notwithstanding this limitation.

(Secs. 4(i) and 303(r), Communications Act of 1934, as amended. §§ 0.131 and 0.331 of the Commission's Rules and 5 U.S.C. 553 (b)(3)(B) and (d)(3); 47 U.S.C. 154(i) and 303)

[43 FR 54791, Nov. 22, 1978]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 90.79, see the List of CFR Sections Affected in the Finding Aids section of this volume.

§ 90.81 Telephone Maintenance Radio Service.

(a) *Eligibility.* Communications common carriers engaged in the provision of landline local exchange telephone service, or interexchange communications service, or who provide wire-telegraph service, and radio communications common carriers authorized in the Point-to-Point Microwave Radio Service under part 21 of this chapter are eligible to hold authorizations in the Telephone Maintenance Radio Service. Resellers that do not own or control transmission facilities are not eligible in this service.

(b) *Special limitations on use.* The facilities authorized in this service shall only be used for transmission of communications directly related to the construction, repair, maintenance or operation of communications common carrier facilities. The facilities authorized in this service shall not be used for the transmission of any common carrier or public correspondence communication.

(c) *Frequencies available.* The following table indicates frequencies available for assignment to stations in the Telephone Maintenance Radio Service, together with the class of station(s) to which they are normally assigned and the specific assignment limitations which are explained in paragraph (d) of this section:

Telephone Maintenance Radio Service Frequency Table

Frequency or band	Class of station(s)	Limitations
Kilohertz:		
2,000 to 25,000	Fixed, base or mobile	14
Megahertz:		
35.16	Base or mobile	
43.16	Mobile	
72-76	Operational fixed	13
150–170	Base or mobile	11
151.985	do	
158.34	Mobile	
169–172	do	15
216 to 220	Base or mobile	2
450 to 470	Fixed	3
451.175	Base or mobile	4
451.225	do	4
451.275	do	4
451.300	do	
451.325	do	
451.350	do	
451.375	do	4
451.400	do	
451.425	do	4
451.450	do	
451.475	do	4
451.500	do	
451.525	do	4
451.575	do	4
451.625	do	4
451.675	do	4
456.175	Mobile	4
456.225	do	4
456.275	do	4
456.300	do	5
456.325	do	5
456.350	do	5
456.375	do	4
456.400	do	5
456.425	do	4
456.450	do	5
456.475	do	4
456.500	do	5
456.525	do	4
456.575	do	4
456.625	do	4
456.675	do	4
462.475	Base or mobile	4
462.525	do	4
467.475	Mobile	4
467.525	do	4
470 to 512	Base or mobile	6
806 to 821	Mobile	7
851 to 866	Base or mobile	7
896 to 901	Mobile	7
928 and above	Operational-fixed	8
929 to 930	Base only	12
935 to 940	Base or mobile	7

Telephone Maintenance Radio Service Frequency Table—Continued

Frequency or band	Class of station(s)	Limitations
1427 to 1435	Operational-fixed, base or mobile.	2
2450 to 2500	Base or mobile	9
8400 to 8500	......do	10
10,550 to 10,680*	......do	

* The frequencies in the band 10.55–10.68 GHz are available for Digital Termination Systems and for associated internodal links in the Point-to-Point Microwave Radio Service. No new licenses will be issued under this subpart but current licenses will be renewed.

(d) Explanation of assignment limitations appearing in the frequency table of paragraph (c) of this section:

(1) [Reserved]

(2) This frequency band is available to stations in this service subject to the provisions of § 90.259.

(3) The frequencies available for use at fixed stations in this band, and the requirements for assignment are set forth in § 90.261. Operation on these frequencies is secondary to stations in the Public Safety and Land Transportation Radio Services where they are assigned for land mobile operations.

(4) This frequency is available on a shared basis in the Power, Petroleum, Forest Products, Manufacturers, and Telephone Maintenance Radio Services. It may be assigned only when all of the base and mobile frequencies in the 450–470 MHz band for which the applicant is primarily eligible are assigned within 35 miles (56 km) of the proposed base station. Applications for this frequency must be coordinated with all five services. Telephone Maintenance Radio Service licensees on this frequency authorized prior to September 26, 1986, including their successors or assignees in business, will be permitted to renew their authorizations indefinitely, increase the number of transmitters operated, and expand the geographic coverage area of their systems, without a showing that all of the base and mobile Telephone Maintenance Radio Service frequencies in this band are assigned within 35 miles (56 km) of the existing base station.

(5) This frequency may be assigned to auxiliary test stations.

(6) Subpart L contains rules for assignment of frequencies in the 470–512 MHz band.

(7) Subpart S contains rules for signment of frequencies in the 80 821/851–866 and 896–901/935–940 M bands.

(8) Assignment of frequencies abo 928 MHz for operational-fixed statio is governed by part 94 of this chapte

(9) Available only on a shared b with stations in other services, subject to no protection from interfe ence due to the operation of indus al, scientific, or medical (ISM) devi In the 2483.5–2500 MHz band, no plications for new or modification existing stations to increase number of transmitters will be acce ed. Existing licensees as of July 1985, or on a subsequent date follo ing as a result of submitting an ap cation for license on or before July 1985, are grandfathered and their eration is co-primary with the Rad determination Satellite Service.

(10) Use of this frequency band limited to developmental operati and is subject to the provisions of part Q.

(11) Rules concerning the use of th band for narrowband operations set forth in § 90.271.

(12) Frequencies in this band available only for one-way paging erations in accordance with § 90.494

(13) The frequencies available use at operational-fixed stations in th band 72–76 MHz are listed § 90.257(a)(1). These frequencies shared with other services and available only in accordance with provisions of § 90.257.

(14) Only entities engaged in repair of telecommunications circu are eligible to use this spectrum, then only in accordance with § 90. Except as provided in this part, lice ees may not use these frequencies the place of other operational circu permitted by the Commission's Rule Circuits operating on these freque cies may be used only for coordinati the repair of wireline or point-to-poi microwave circuits.

(15) Frequencies in this band will assigned for low power wireless micr phones in accordance with the prov sions of § 90.265.

(e) *Additional frequencies availab* In addition to the frequencies show in the frequency table of this sectio he following frequencies are available n this service: (See also § 90.253.)

(1) [Reserved]

(2) Frequencies in the band 73.0-74.6 IHz may be assigned to stations au- horized their use on or before Decem- er 1, 1961, but no new stations will be uthorized in this band, nor will ex- ansion of existing systems be permit- ed. (See also § 90.257.)

(3) Frequencies in the 421-430 MHz and are available in the Detroit, leveland, and Buffalo areas in ac- ordance with the rules in §§ 90.273 hrough 90.281.

(f) *Limitation on number of frequen- ies assignable.* Normally only one fre- uency, or pair of frequencies in the aired frequency mode of operation, ill be assigned for mobile service op- rations by a single applicant in a iven area. The assignment of an addi- ional frequency or pair of frequencies ill be made only upon a satisfactory howing of need, except that:

(1) Additional frequencies above 25 IHz may be assigned in connection ith operation of mobile repeaters in ccordance with § 90.247 notwith- tanding this limitation;

(2) Frequencies in ranges 30.56-30.57 IHz, 35.00-35.01 MHz, 35.99-36.00 IHz, and 37.00-37.01 MHz are avail- ble for assignment of applicants in his service subject to the provisions of ubpart Q notwithstanding this limita- ion.

(3) Frequencies in the 25-50 MHz, 50-170 MHz, and 450-512 MHz bands, nd the frequency bands 903-904 MHz, 04-912 MHz, 918-926 MHz, and 926- 27 MHz may be assigned for the oper- tion of automatic vehicle monitoring AVM) systems in accordance with 90.239, notwithstanding this limita- on.

ecs. 4(i) and 303(r), Communications Act 1934, as amended, §§ 0.131 and 0.331 of e Commission's Rules and 5 U.S.C. 553)(3)(B) and (d)(3); 47 U.S.C. 154(i) and 3)

3 FR 54791, Nov. 22, 1978]

EDITORIAL NOTE: For FEDERAL REGISTER ci- tions affecting § 90.81, see the List of CFR ctions Affected in the Finding Aids sec- on of this volume.

Subpart E—Land Transportation Radio Services

§ 90.85 Scope.

The Land Transportation Radio Services include the Motor Carrier, Railroad, Taxicab and Automobile Emergency Radio Services. Rules as to eligibility for licensing, permissible communications, assignable frequencies, and any special requirements as to each of these radio services are set forth in the following sections.

[43 FR 54791, Nov. 22, 1978, as amended at 54 FR 39739, Sept. 28, 1989]

§ 90.87 General eligibility.

(a) In addition to the eligibility shown in each Land Transportation Radio Service, eligibility is also provided for any corporation proposing to furnish non-profit radiocommunication service to its parent corporation, to another subsidiary of the same parent, or to its own subsidiary provided the party served is regularly engaged in any of the eligibility activities set forth in the particular service involved. This corporate eligibility is not subject to the cooperative use provisions of § 90.179.

(b) Eligibility is also provided for a non-profit corporation or association that is organized for the purpose of furnishing a radiocommunication service to persons actually engaged in any of the eligibility activities set forth in the particular service involved. Such use is subject to the cooperative use provisions of § 90.179.

[47 FR 19538, May 6, 1982]

§ 90.89 Motor Carrier Radio Service.

(a) *Eligibility.* Persons primarily engaged in providing a common or contract motor carrier transportation service in any of the following activities are eligible to hold authorizations in the Motor Carrier Radio Service to operate radio stations for transmission of communications essential to such activities of the licensee: Provided, however, That motor vehicles used as taxicabs, livery vehicles, or school buses, and motor vehicles used for sightseeing or special charter purposes, shall not be included within the meaning of this term as used in the Motor Carrier Radio Service. For purposes of this rule, an urban area is defined as being one or more contiguous, incorporated or unincorporated cities, boroughs, towns, or villages, have aggregate population of 2,500 or more persons.

(1) The transportation of passengers between urban areas.

(2) The transportation of property between urban areas.

(3) The transportation of passengers within a single urban area.

(4) The transportation, local distribution or collection of property within a single urban area.

(b) *Frequencies available.* The following table indicates frequencies available for assignment to stations in the Motor Carrier Radio Service, together with the class of station(s) to which they are normally assigned; and the specific assignment limitations, which are explained in paragraph (c) of this section:

Motor Carrier Radio Service Frequency Table

Frequency or band	Class of station(s)	Limitations
Megahertz:		
30.66	Base or mobile	1, 2
30.74	do	1, 2
30.82	do	1, 2
30.86	do	1, 3
30.90	do	1, 3
30.94	do	1, 3
30.98	do	1, 3
31.02	do	1, 3
31.06	do	1, 3
31.08	do	1
31.10	do	1, 3
31.12	do	1
31.14	do	1, 3
43.70	do	4
43.72	do	4
43.74	do	4
43.76	do	4
43.78	do	4
43.80	do	4
43.82	do	4
43.84	do	4
43.86	do	5, 6
43.88	do	5, 6
43.90	do	5, 6
43.92	do	5, 6
43.94	do	5, 6
43.96	do	5
43.98	do	5
44.00	do	5
44.02	do	5
44.04	do	5
44.06	do	5
44.08	do	5
44.10	do	5, 19

Motor Carrier Radio Service Frequency Table—Continued

Frequency or band	Class of station(s)
44.12	do
44.14	do
44.16	do
44.18	do
44.20	do
44.22	do
44.24	do
44.26	do
44.28	do
44.30	do
44.32	do
44.34	do
44.36	do
44.38	do
44.40	do
44.42	do
44.44	do
44.46	dc
44.48	do
44.50	do
44.52	do
44.54	do
44.56	do
44.58	do
44.60	do
72-76	Operational fixed
150-170	Base or mobile
159.495	do
159.510	do
159.525	do
159.540	do
159.555	do
159.570	do
159.585	do
159.600	do
159.615	do
159.630	do
159.645	do
159.660	do
159.675	do
159.690	do
159.705	do
159.720	do
159.735	do
159.750	do
159.765	do
159.780	do
159.795	do
159.810	do
159.825	do
159.840	do
159.855	do
159.870	do
159.885	do
159.900	do
159.915	do
159.930	do
159.945	do
159.960	do
159.975	do
159.990	do
160.005	do
160.020	do
160.035	do
160.050	do
160.065	do
160.080	do
160.095	do

Motor Carrier Radio Service Frequency Table—Continued

Frequency or band	Class of station(s)	Limitations
160.110	do	8
160.125	do	8
160.140	do	8
160.155	do	8
160.170	do	8
160.185	do	8
160.200	do	8
169–172	Mobile	17
450–470	Fixed	9
452.325	Base or mobile	10
452.375	do	10
452.425	do	10
452.475	do	10
452.625	do	
452.650	do	
452.675	do	
452.700	do	
452.725	do	
452.750	do	
452.775	do	10
452.800	do	
452.825	do	10
452.850	do	
452.875	do	10
457.325	Mobile	10
457.375	do	10
457.425	do	10
457.475	do	10
457.625	do	
457.650	do	
457.675	do	
457.700	do	
457.725	do	
457.750	do	
457.775	do	10
457.800	do	
457.825	do	10
457.850	do	
457.875	do	10
470 to 512	Base or mobile	11
806 to 821	Mobile	12
851 to 866	Base or mobile	12
896 to 901	Mobile	12
928 and above	Operational-fixed	13
929 to 930	Base only	18
935 to 940	Base or mobile	12
1427 to 1435	Operational-fixed, base or mobile.	14
2450 to 2500	Base or mobile	15
8400 to 8500	do	16
10,550 to 10,680*	do	

* The frequencies in the band 10.55–10.68 GHz are available for Digital Termination Systems and for associated intermodal links in the Point-to-Point Microwave Radio Service. No new licenses will be issued under this subpart but current licenses will be renewed.

(c) Explanation of assignment limitations appearing in the frequency table of paragraph (b) of this section:

(1) This frequency is available for assignment in this service only to common and contract motor carriers of passengers within a single urban area.

(2) This frequency is available on a shared basis with the Petroleum Radio Service.

(3) This frequency is available on a shared basis with stations in the Forestry-Conservation Radio Service.

(4) This frequency is available for assignment in this service only to common and contract motor carriers of passengers between urban areas.

(5) This frequency is available for assignment in this service only to common and contract motor carriers of property between urban areas.

(6) In addition to single frequency operation, this frequency is available to base and mobile stations for the paired frequency mode of operation. For two frequency systems, the separation between base and mobile transmit frequencies is 500 kHz with the base stations transmitting on the higher of the two frequencies.

(7) The frequencies available for use at operational fixed stations in the band 72–76 MHz are listed in § 90.257(a)(1). These frequencies are shared with other services and are available only in accordance with the provisions of § 90.257.

(8) This frequency is available for assignment in this service only to common and contract motor carriers of property.

(9) The frequencies available for use at fixed stations in this band, and the requirements for assignment are set forth in § 90.261. Operation on these frequencies is secondary to stations in the Public Safety and Industrial Radio Services where they are assigned for land mobile operations.

(10) This frequency is shared in the Motor Carrier and Railroad Radio Services. It may be assigned only when all of the frequencies in the 450–470 MHz band allocated to the service in which the applicant is primarily eligible are assigned within 56 km. (35 mi.) of the proposed base station.

(11) Subpart L contains rules for assignment of frequencies in the 470–512 MHz band.

(12) Subpart S contains rules for assignment of frequencies in the 806–821/851–866 and 896–901/935–940 MHz bands.

(13) Assignment of frequencies above 928 MHz for operational-fixed

stations is governed by part 94 of this chapter.

(14) This frequency is available to stations in this service subject to the provisions of § 90.259.

(15) Available only on a shared basis with stations in other services, and subject to no protection from interference due to the operation of industrial, scientific, or medical (ISM) devices. In the 2483.5-2500 MHz band, no applications for new or modification to existing stations to increase the number of transmitters will be accepted. Existing licensees as of July 25, 1985, or on a subsequent date following as a result of submitting an application for license on or before July 25, 1985, are grandfathered and their operation is co-primary with the Radiodetermination Satellite Service.

(16) Use of this frequency band is limited to developmental operation and is subject to the provisions of subpart Q.

(17) Frequencies in this band will be assigned for low power wireless microphones in accordance with the provisions of § 90.265.

(18) Frequencies in this band are available only for one-way paging operations in accordance with § 90.494.

(19) In the State of Alaska only, the frequency 44.10 MHz is available for assignment on a primary basis to stations in the Common Carrier Rural Radio Service utilizing meteor burst communications. The frequency may be used by private radio stations for meteor burst communications on a secondary, noninterference basis. Usage shall be in accordance with parts 22 and 90 of this chapter. Stations utilizing meteor burst communications shall not cause harmful interference to stations of other radio services operating in accordance with the allocation table.

(20) In the State of Alaska only, the frequency 44.20 MHz is available for assignment on a primary basis to private land mobile radio stations utilizing meteor burst communications. The frequency may be used by common carrier stations for meteor burst communications on a secondary, noninterference basis. Usage shall be in accordance with parts 22 and 90 of this chapter. Stations utilizing meteor burst communications shall not caus
ful interference to stations o
radio services operating in acc
with the allocation table.

(21) Rules concerning the use
band for narrowband operati
set forth in § 90.271.

(d) *Additional frequencies av*
In addition to the frequencies
in the frequency table of this
the following frequencies are av
in this service: (See also § 90.253

(1) [Reserved]

(2) Frequencies in the band 73
MHz may be assigned to statio
thorized their use on or before
ber 1, 1961, but no new stations
authorized in this band, nor
pansion of existing systems be
ted. (See also § 90.257.)

(3) The frequency band 33.0
MHz may be used for develop
operations subject to the provisi
subpart Q. Any type of emission
than pulsed emission may be
the bandwidth occupied by the
sion is contained within the a
frequency band.

(4) Frequencies in the 421-430,
band are available in the D
Cleveland, and Buffalo areas
cordance with the rules in §§
through 90.281.

(e) *Limitation on number of fre*
cies assignable. Normally only on
quency, or pair of frequencies i
paired frequency mode of oper
will be assigned for mobile servic
erations by a single applicant
given area. The assignment of an
tional frequency or pair of freque
will be made only upon a satisfa
showing of need, except that:

(1) Additional frequencies abov
MHz may be assigned in conne
with operation of mobile repeate
accordance with § 90.247, not
standing this limitation.

(2) Frequencies in the 25-50
150-170 MHz, and 450-512 MHz ba
and the frequency bands 903-904
904-912 MHz, 918-926 MHz, and
927 MHz may be assigned for the o
ation of Automatic Vehicle (AVM)
tems in accordance with § 90.239,
withstanding this limitation.

(Secs. 4(i) and 303(r), Communications
of 1934, as amended, §§ 0.131 and 0.3

the Commission's Rules and 5 U.S.C. 553 (b)(3)(B) and (d)(3); 47 U.S.C. 154(i) and 303)

[43 FR 54791, Nov. 22, 1978]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 90.89, see the List of CFR Sections Affected in the Finding Aids section of this volume.

§ 90.91 Railroad Radio Service.

(a) *Eligibility.* Railroad common carriers which are regularly engaged in the transportation of passengers or property when such passengers or property are transported over all or part of their route by railroad are eligible to hold authorizations in the Railroad Radio Service to operate radio stations for transmission of communications and to assure safety of operations essential to such activities of the licensee.

(b) *Frequencies available.* The following table indicates frequencies available for assignment to stations in the Railroad Radio Service, together with the class of station(s) to which they are normally assigned; and the specific assignment limitations, which are explained in paragraph (d) of this section:

Railroad Radio Service Frequency Table

Frequency or band	Class of station(s)	Limitations
Megahertz:		
72.0 to 76.0	Operational fixed	1
72.44	Mobile	2
72.48	do	2
72.52	do	2
72.56	do	2
72.60	do	2
75.44	do	2
75.48	do	2
75.52	do	2
75.56	do	2
75.60	do	2
150-170	Base or mobile	18
160.215	do	3, 4
160.230	do	3, 4
160.245	do	3, 4
160.260	do	3, 4
160.275	do	3, 4
160.290	do	3, 4
160.305	do	3, 4
160.320	do	3, 4
160.335	do	3, 4
160.350	do	3, 4
160.365	do	3, 4
160.380	do	3, 4
160.395	do	3, 4
160.410	do	3, 4
160.425	do	3, 4, 5
160.440	do	3, 4, 5
160.455	do	3, 4, 5
160.470	do	3, 4, 5
160.485	do	3, 4, 5
160.500	do	3, 4, 5
160.515	do	3, 4, 5
160.530	do	3, 4, 5
160.545	do	3, 4, 5
160.560	do	3, 4, 5
160.575	do	3, 4, 5
160.590	do	3, 4, 5
160.605	do	3, 4, 5
160.620	do	3, 4
160.635	do	3, 4
160.650	do	3, 4
160.665	do	3, 4
160.680	do	3, 4
160.695	do	3, 4
160.710	do	3, 4
160.725	do	3, 4
160.740	do	3, 4
160.755	do	3, 4
160.770	do	3, 4
160.785	do	3, 4
160.800	do	3, 4
160.815	do	3, 4
160.830	do	3, 4
160.845	do	3, 4
160.860	do	3, 4, 6
160.875	do	3, 4, 6
160.890	do	3, 4, 6
160.905	do	3, 4, 6
160.920	do	3, 4, 6
160.935	do	3, 4, 6
160.950	do	3, 4, 6
160.965	do	3, 4, 6
160.980	do	3, 4, 6
160.995	do	3, 4, 6
161.010	do	3, 4, 6
161.025	do	3, 4, 6
161.040	do	3, 4, 6
161.055	do	3, 4, 6
161.070	do	3, 4, 6
161.085	do	3, 4, 6
161.100	do	3, 4, 6
161.115	do	3, 4, 6
161.130	do	3, 4, 6
161.145	do	3, 4, 6
161.160	do	3, 4, 6
161.175	do	3, 4, 6
161.190	do	3, 4, 6
161.205	do	3, 4, 6
161.220	do	3, 4, 6
161.235	do	3, 4, 6
161.250	do	3, 4, 6
161.265	do	3, 4, 6
161.280	do	3, 4, 6
161.295	do	3, 4, 6
161.310	do	3, 4, 6
161.325	do	3, 4, 6
161.340	do	3, 4, 6
161.355	do	3, 4, 6
161.370	do	3, 4, 6
161.385	do	3, 4, 7
161.400	do	3, 4, 7
161.415	do	3, 4, 7
161.430	do	3, 4, 7
161.445	do	3, 4, 7

Railroad Radio Service Frequency Table—Continued

Frequency or band	Class of station(s)	Limitations
161.460	......do	3, 4, 7
161.475	......do	3, 4, 7
161.490	......do	3, 4, 7
161.505	......do	3, 4, 7
161.520	......do	3, 4, 7
161.535	......do	3, 4, 7
161.550	......do	3, 4, 7
161.565	......do	3, 4, 7
169 to 172	Mobile, operational fixed.	8
406 to 413	Operational fixed	8
450 to 470	......do	9
452.325	Base or mobile	10
452.375	......do	10
452.425	......do	10
452.475	......do	10
452.775	......do	10
452.825	......do	10
452.875	......do	10
452.900	......do	
452.925	......do	11
452.950	......do	11
457.325	Mobile	10
457.375	......do	10
457.425	......do	10
457.475	......do	10
457.775	......do	10
457.825	......do	10
457.875	......do	10
457.900	......do	
457.925	......do	11
457.950	......do	11
470 to 512	Base or mobile	12
806 to 821	Mobile	13
851 to 866	Base or mobile	13
896 to 901	Mobile	13
928 and above	Operational-fixed	14
929 to 930	Base only	19
935 to 940	Base or mobile	13
1427 to 1435	Operational-fixed, base or mobile	15
2450 to 2500	Base or mobile	16
8400 to 8500	......do	17
10,550 to 10,680*	......do	

* The frequencies in the band 10.55–10.68 GHz are available for Digital Termination Systems and for associated internodal links in the Point-to-Point Microwave Radio Service. No new licenses will be issued under this subpart but current licenses will be renewed.

(c) Explanation of assignment limitations appearing in the frequency table of paragraph (c) of this section:

(1) The frequencies available for assignment to operational fixed stations in the band 72.0 to 76.0 MHz are listed in § 90.257(a)(1). These frequencies which are shared with other services, are available only in accordance with the provisions of § 90.257.

(2) This frequency is available on a shared basis in the Manufacturers, Forest Products, Special Industrial, and Railroad Radio Services and inter-service coordination is required. All communications must be within the boundaries or confines of railroad terminals or yards. All operations on this frequency are subject to the provisions of § 90.257(b).

(3) This frequency may be used for the following:

(i) End-to-end, fixed point-to-train or train-to-train communications in connection with the operation of railroad trains over a track, in yards, or tracks extending through yards and between stations upon which trains are operated by timetable, train orders or both, or the use of which is governed by block signals.

(ii) Intercommunication between adjacent base stations, provided interference is not caused to communications involving radio stations aboard railroad rolling stock.

(iii) Transmission of tone signals for signaling purposes or for remote control of locomotives, including slave locomotives placed within a train to assist the lead locomotive by providing, among other functions auxiliary starting, pulling, and braking actions and radio controlled cab indicator devices that are placed within a locomotive to give visual signals to the operator of the locomotive.

(4) This frequency may also be used for the transmission of tone or voice communications, including such communications when prerecorded, for purposes of automatically indicating abnormal conditions of trackage and railroad rolling stock when in motion on a secondary basis to other stations on this frequency. All such operations shall be subject to the following:

(i) The output power shall not exceed 30 watts.

(ii) The bandwidth used shall not exceed that authorized to the licensee for voice transmissions on the frequency concerned.

(iii) The station shall be so designed and installed that it can normally be activated only by its associated automatic control equipment and, in addition, it shall be equipped with a time delay or clock device which will deactivate the station within three (3) minutes following activation by the last car in the train.

iv) Stations authorized pursuant to e provisions of this subparagraph e exempt from the station identifi- ion requirements of § 90.425.

5) This frequency is shared with d must be coordinated with the Spe- l Industrial Radio Service in Puerto co and the Virgin Islands.

6) In Puerto Rico and the Virgin Is- ds only, this frequency is available a shared basis with remote pickup oadcast stations.

7) In Puerto Rico and the Virgin Is- ds only, this frequency is not avail- le to stations operating in the Rail- d Radio Service.

8) Frequencies in this band will be signed only for transmitting hydro- gical or meteorological data or for v power wireless microphones in ac- rdance with the provisions of 0.265.

9) The frequencies available for use fixed stations in this band, and the quirements for assignment are set rth in § 90.261. Operation on these equencies is secondary to stations in e Public Safety and Industrial Radio rvices where they are assigned for nd mobile operations.

10) This frequency is shared in the otor Carrier and Railroad Radio rvices. It may be assigned only when of the frequencies in the 450–470 Hz band allocated to the service in ich the applicant is primarily eligi- e are assigned within 56 km. (35 mi.) the proposed base station.

11) This frequency may be assigned imarily for stations used for the pur- se of controlling slave locomotives at are placed within a train to assist e lead locomotive by providing, ong other functions, auxiliary rting, pulling, and braking actions. ditionally, on a secondary basis this equency may be assigned for remote ntrol of all types of locomotives and, thin a railroad yard or terminal ea, for remote control of cab indica- r devices placed with a locomotive to e visual signals to the operator of e locomotive. (A1, A2, F1 or F2 emis- ns may be authorized.)

12) Subpart L contains rules for as- nment of frequencies in the 470–512 Hz band.

13) Subpart S contains rules for as- nment of frequencies in the 806–821/851–866 and 896–901/935–940 MHz bands.

(14) Assignment of frequencies above 928 MHz for operational-fixed stations is governed by part 94 of this chapter.

(15) This frequency band is available to stations in this services subject to the provisions of § 90.259.

(16) Available only on a shared basis with stations in other services, and subject to no protection from interference due to the operation of industrial, scientific, or medical (ISM) devices. In the 2483.5–2500 MHz band, no applications for new or modification to existing stations to increase the number of transmitters will be accepted. Existing licensees as of July 25, 1985, or on a subsequent date following as a result of submitting an application for license on or before July 25, 1985, are grandfathered and their operation is co-primary with the Radiodetermination Satellite Service.

(17) Use of this frequency band is limited to developmental operation and is subject to the provisions of subpart Q.

(18) Rules concerning the use of this band for narrowband operations are set forth in § 90.271.

(19) Frequencies in this band are available only for one-way paging operations in accordance with § 90.494.i

(d) *Additional frequencies available.* In addition to the frequencies shown in the frequency table of this section, the following frequencies are available in this service: (See also § 90.253).

(1) [Reserved]

(2) Frequencies in the band 73.0–74.6 MHz may be assigned to stations authorized their use on or before December 1, 1961, but no new stations will be authorized in this band, nor will expansion of existing systems be permitted. (See also § 90.257.)

(3) Base and mobile stations authorized as of April 1, 1968, to operate on frequency 161.61 MHz may continue to be authorized for such operation on a secondary basis to the Maritime Mobile Service. The licensees of such stations may renew, modify, reinstate, or assign their licenses in those cases where such assignment accompanies a change of ownership of the licensee's business to the assignee, and may

expand existing systems when using that frequency; however, they will not be authorized to establish any new systems on the frequency.

(4) Stations authorized for operation on or before June 11, 1962, on the frequencies 169.575, 170.375, 171.175, 171.975, or 406.050 MHz may continue to be authorized for such operation on a secondary basis to Government stations.

(5) The frequency band 33.00-33.01 MHz may be used for developmental operation subject to the provisions of subpart Q. Any type of emission other than pulsed emission may be used if the bandwidth occupied by the emission is contained within the assigned frequency band.

(6) Frequencies in the 421-430 MHz band are available in the Detroit, Cleveland, and Buffalo areas in accordance with the rules in §§ 90.273 through 90.281.

(e) *Limitation on number of frequencies assignable.* Normally only one frequency, or pair of frequencies in the paired frequency mode of operation, will be assigned from mobile service operations by a single applicant in a given area. The assignment of an additional frequency or pair of frequencies will be made only upon a satisfactory showing of need, except that:

(1) Additional frequencies above 25 MHz may be assigned in connection with operation of mobile repeaters in accordance with § 90.247 notwithstanding this limitation.

(2) Frequencies in the 25-50 MHz, 150-170 MHz, and 450-512 MHz bands, and the frequency bands 903-904 MHz, 904-912 MHz, 918-926 MHz, and 926-927 MHz may be assigned for the operation of Automatic Vehicle Monitoring (AVM) systems in accordance with § 90.239, notwithstanding this limitation.

(Secs. 4(i) and 303(r), Communications Act of 1934, as amended, §§ 0.131 and 0.331 of the Commission's Rules and 5 U.S.C. 553 (b)(3)(B) and (d)(3); 47 U.S.C. 154(i) and 303)

[43 FR 54791, Nov. 22, 1978]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 90.91, see the List of CFR Sections Affected in the Finding Aids section of this volume.

§ 90.93 Taxicab Radio Service.

(a) *Eligibility.* Persons regularly engaged in furnishing to the public for hire a nonscheduled passenger land transportation service (which may also include the occasional transport of small items of property) not operated over a regular route or between established terminals are eligible to hold authorizations in the Taxicab Radio Service to operate radio stations for the transmission of communications essential to such activities of the licensee.

(b) *Frequencies available.* The following table indicates frequencies available for assignment to stations in the Taxicab Radio Service, together with the class of station(s) to which they are normally assigned; and the specific assignment limitations, which are explained in paragraph (c) of this section:

Taxicab Radio Service Frequency Table

Frequency or band	Class of station(s)	Limitations
Megahertz:		
72-76	Operational fixed	[illegible]
150-170	Base or mobile	[illegible]
152.270	do	
152.285	do	
152.300	do	1,2
152.315	do	1,2
152.330	do	
152.345	do	1,2
152.360	do	1,2
152.375	do	1,2
152.390	do	
152.405	do	1,2
152.420	do	1,2
152.435	do	
152.450	do	
152.465	do	11
157.530	Mobile	
157.545	do	
157.560	do	1,2
157.575	do	1,2
157.590	do	
157.605	do	1,2
157.620	do	1,2
157.635	do	1,2
157.650	do	
157.665	do	1,2
157.680	do	1,2
157.695	do	
157.710	do	
157.725	do	11
169-172	do	12
450 to 470	Fixed	3
452.050	Base or mobile	
452.100	do	10
452.150	do	
452.200	do	10
452.225	do	10

Taxicab Radio Service Frequency Table—Continued

Frequency or band	Class of station(s)	Limitations
452.250	......do	10
452.275	......do	10
452.300	......do	
452.350	......do	10
452.400	......do	10
452.450	......do	10
452.500	......do	
457.050	Mobile	
457.100	......do	10
457.150	......do	
457.200	......do	10
457.225	......do	10
457.250	......do	10
457.275	......do	10
457.300	......do	
457.350	......do	10
457.400	......do	10
457.450	......do	10
457.500	......do	
470–512	Base or mobile	4
806 to 821	Mobile	5
851 to 866	Base or mobile	5
896 to 901	Mobile	5
928 and above	Operational-fixed	6
929 to 930	Base only	13
935 to 940	Base or mobile	5
1427 to 1435	Operational-fixed, base or mobile.	7
2450 to 2500	Base or mobile	8
6400 to 6500	......do	9
10,550 to 10,680*	......do	

* The frequencies in the band 10.55–10.68 GHz are avail-
le for Digital Termination Systems and for associated
emodal links in the Point-to-Point Microwave Radio Serv-
. No new licenses will be issued under this subpart but
rent licenses will be renewed.

(c) Explanation of assignment limi-
tions appearing in the frequency
ble of paragraph (b) of this section:

(1) This frequency is available for as-
nment only to base or mobile sta-
ns operating wholly within Stand-
d Metropolitan Areas having 50,000
more population (1950 Census).

2) This frequency is also available
Business Radio Service licensees for
e at stations outside Standard Met-
politan Areas having 50,000 or more
pulation (1950 Census).

3) The frequencies available for use
fixed stations in this band, and the
uirements for assignment are set
th in § 90.261. Operation on these
quencies is secondary to stations in
e Public-Safety and Industrial Radio
rvices where they are assigned for
d mobile operations.

4) Subpart L contains rules for as-
nment of frequencies in the 470–512
lz band.

(5) Subpart S contains rules for assignment of frequencies in the 806–821/851–866 and 896–901/935–940 MHz bands.

(6) Assignment of frequencies above 928 MHz for operational-fixed stations is governed by part 94 of this chapter.

(7) This frequency band is available to stations in this service subject to the provisions of § 90.259.

(8) Available only on a shared basis with stations in other services, and subject to no protection from interference due to the operation of industrial, scientific, or medical (ISM) devices. In the 2483.5–2500 MHz band, no applications for new or modification to existing stations to increase the number of transmitters will be accepted. Existing licensees as of July 25, 1985, or on a subsequent date following as a result of submitting an application for license on or before July 25, 1985, are grandfathered and their operation is co-primary with the Radiodetermination Satellite Service.

(9) Use of this frequency band is limited to developmental operation and is subject to the provisions of subpart Q.

(10) This frequency is shared by stations in the Forest Products Radio Service in the States of Washington, Oregon, Idaho, and Montana in areas at least 40 miles removed from the center of urbanized areas of 200,000 or more population, 1970 Decennial Census. (Provided that, taxicab operations within the specified urbanized areas will not be authorized on frequencies shared with the Forest Products Radio Service until the unshared frequencies are fully utilized.) For two-frequency systems, separation between base and mobile transmit frequencies is 5 MHz; however, a mobile station may be assigned the frequency of an associated base station. (Such operation may, however, subject the single-frequency system to interference that would not occur to a two-frequency system.)

(11) This frequency is shared with the Forest Products and Special Industrial Radio Services. Use of this frequency is limited to stations located at least 80.5 km. (50 miles) from the center of any urbanized area of 600,000 or more population (U.S. Census of Population, 1970).

(12) Frequencies in this band will be assigned for low power wireless microphones in accordance with the provisions of § 90.265.

(13) Frequencies in this band are available only for one-way paging operations in accordance with § 90.494.

(14) The frequencies available for use at operational-fixed stations in the band 72-76 are listed in § 90.257(a)(1). These frequencies are shared with other services and are available only in accordance with the provisions of § 90.257.

(15) Rules concerning the use of this band for narrowband operations are set forth in § 90.271.

(d) *Limitation on number of frequencies assignable.* Normally only one frequency, or pair of frequencies in the paired frequency mode of operation, will be assigned for mobile service operations by a single applicant in a given area. The assignment of an additional frequency or pair of frequencies will be made only upon a satisfactory showing of need, except that: (See also § 90.253).

(1) [Reserved]

(2) Frequencies in the 25-50 MHz, 150-170 MHz, and 450-512 MHz bands, and the frequency bands 903-904 MHz, 904-912 MHz, 918-926 MHz, and 926-927 MHz may be assigned for the operation of Automatic Vehicle Monitoring (AVM) systems in accordance with § 90.239, notwithstanding this limitation.

(3) The frequency band 33.00-33.01 MHz may be used for developmental operation subject to the provisions of subpart Q. Any type of emission other than pulsed emission may be used if the bandwidth occupied by the emission is contained within the assigned frequency band.

(e) In addition to the frequencies shown in the frequency table of this section, frequencies in the 421-430 MHz band are available in the Detroit, Cleveland, and Buffalo areas in accordance with the rules in §§ 90.273 through 90.281.

(Secs. 4(i) and 303(r), Communications Act of 1934, as amended, §§ 0.131 and 0.331 of the Commission's Rules and 5 U.S.C. 553 (b)(3)(B) and (d)(3); 47 U.S.C. 154(i) and 303)

[43 FR 54791, Nov. 22, 1978]

EDITORIAL NOTE: For FEDERAL REGISTE tations affecting § 90.93, see the List of CF Sections Affected in the Finding Aids se tion of this volume.

§ 90.95 Automobile Emergency Radi Service.

(a) *Eligibility.* Persons regularly en gaged in any of the following activitie are eligible to hold authorizations the Automobile Emergency Radi Service to operate radio stations fo transmission of communications re quired for dispatching repair truck tow trucks, or other road service vehi cles to disabled vehicles.

(1) The operation of a private emer gency road service for disabled vehi cles by associations of owners of pr vate automobiles.

(2) The business of providing to th general public an emergency roa service for disabled vehicles.

(b) *Special permissible communica tions.* On a secondary basis, the tran mission of communications by associa tions of owners of private automobile which provide emergency road servic for the purpose of reporting traffi conditions is authorized.

(c) *Frequencies available.* The fol lowing table indicates frequencie available for assignment to stations i the Automobile Emergency Radi Service, together with the class o station(s) to which they are normall assigned; and the specific assignmen limitations which are explained i paragraph (d) of this section:

Automobile Emergency Radio Service Frequency Table

Frequency or band	Class of station(s)	Limi
Megahertz:		
72-76	Operational fixed	[illegible]
150-170	Base or mobile	[illegible]
150.815	do	1, 2, 3
150.830	do	1, 2, 3
150.845	do	1, 2, 3
150.860	do	1, 2, 3
150.875	do	1, 2, 3
150.890	do	1, 2, 3
150.905	do	3, 4
150.920	do	3, 4
150.935	do	3, 4
150.950	do	3, 4
150.965	do	3, 4
157.470	do	5, 6
157.485	do	5, 6
157.500	do	5, 6

Automobile Emergency Radio Service Frequency Table—Continued

Frequency or band	Class of station(s)	Limitations
157.515	do	5, 6
169-172	Mobile	17
450 to 470	Fixed	7
452.525	Base or mobile	8
452.550	do	8
452.575	do	8
452.600	do	8
470 to 512	do	9
806 to 821	Mobile	10
851 to 866	Base or mobile	10
896 to 901	Mobile	10
928 and above	Operational-fixed	11
929 to 930	Base only	15
935 to 940	Base or mobile	10
1427 to 1435	Operational-fixed, base or mobile.	12
2450 to 2500	Base or mobile	13
8400 to 8500	do	14
10,550 to 10,680*	do	

*The frequencies in the band 10.55–10.68 GHz are available for Digital Termination Systems and for associated intermodal links in the Point-to-Point Microwave Radio Services. No new licensees will be issued under this subpart but current licenses will be renewed.

(d) Explanation of assignment limitations appearing in the frequency table of paragraph (c) of this section:

(1) This frequency is available only for stations (other than those aboard aircraft) which are operated by or on behalf of persons who provide to the general public an emergency road service for disabled vehicles.

(2) Only one of the frequencies 150.815, 150.830, 150.845, 150.860, 150.875, or 150.890 MHz may be assigned to the same licensee in a given area.

(3) This frequency is not available to stations in this service in Puerto Rico or the Virgin Islands.

(4) This frequency is available for assignment to base stations and to mobile stations (other than those aboard aircraft) which are operated by or on behalf of associations of owners of private automobiles.

(5) This frequency is available for assignment to stations, other than those aboard aircraft, which are operated by or on behalf of persons who provide to the general public an emergency road service for disabled vehicles: Except that: at the discretion of the Commission this frequency may also be operated by or on behalf of associations of owners of private automobiles upon a showing that all other frequencies available for assignment to such stations are currently assigned to other stations for use in the area concerned and that the use of the requested frequency, in each case, will be less likely to result in mutual harmful interference that would the use of a frequency otherwise available to the station.

(6) Only one of the frequencies 157.470, 157.485, 157.500, or 157.515 MHz may be assigned to the same licensee in a given area.

(7) The frequencies available for use at fixed stations in this band, and the requirements for assignment are set forth in § 90.261. Operation on these frequencies is secondary to stations in the Public-Safety and Industrial Radio Services where they are assigned for land mobile operations.

(8) This frequency is available for assignment to stations which are operated by or on behalf of associations of owners of private automobiles for single-frequency operation.

(9) Subpart L contains rules for assignment of frequencies in the 470-512 MHz band.

(10) Subpart S contains rules for assignment of frequencies in the 806-821/851-866 and 896-901/935-940 MHz bands.

(11) Assignment of frequencies above 928 MHz for operational-fixed stations is governed by part 94 of this chapter.

(12) This frequency band is available to stations in this service subject to the provisions of § 90.259.

(13) Available only on a shared basis with stations in other services, and subject to no protection from interference due to the operation of industrial, scientific, or medical (ISM) devices. In the 2483.5-2500 MHz band, no applications for new or modification to existing stations to increase the number of transmitters will be accepted. Existing licensees as of July 25, 1985, or on a subsequent date following as a result of submitting an application for license on or before July 25, 1985, are grandfathered and their operation is co-primary with the Radiodetermination Satellite Service.

(14) Use of this frequency band is limited to developmental operation and is subject to the provisions of subpart Q.

(15) Frequencies in this band are available only for one-way paging operations in accordance with § 90.494.

(16) The frequencies available for use at operational-fixed stations in the band 72-76 MHz are listed in § 90.257(a)(1). These frequencies are shared with other services and are available only in accordance with the provisions of § 90.257.

(17) Frequencies in this band will be assigned for low power wireless microphones in accordance with the provisions of § 90.265.

(18) Rules concerning the use of this band for narrowband operations are set forth in § 90.271.

(e) *Limitation on number of frequencies assignable.* Normally only one frequency, or pair of frequencies in the paired frequency mode of operation, will be assigned for mobile service operations by a single applicant in a given area. The assignment of an additional frequency or pair of frequencies will be made only upon a satisfactory showing of need, except that: (See also § 90.253.)

(1) [Reserved]

(2) Frequencies in the 25-50 MHz, 150-170 MHz, and 450-512 MHz bands, and the frequency bands 903-904 MHz, 904-912 MHz 918-926 MHz, and 926-027 MHz may be assigned for the operation of Automatic Vehicle Monitoring (AVM) systems in accordance with § 90.239, notwithstanding this limitation.

(3) The frequency band 33.00-33.01 MHz may be used for developmental operation subject to the provisions of subpart Q. Any type of emission other than pulsed emission may be used if the bandwidth occupied by the emission is contained within the assigned frequency band.

(f) In addition to the frequencies shown in the frequency table of this section, frequencies in the 421-430 MHz band are available in the Detroit, Cleveland, and Buffalo areas in accordance with the rules in §§ 90.273 through 90.281.

(Secs. 4(i) and 303(r), Communications Act of 1934, as amended, §§ 0.131 and 0.331 of the Commission's Rules and 5 U.S.C. 553 (b)(3)(B) and (d)(3); 47 U.S.C. 154(i) and 303)

[43 FR 54791, Nov. 22, 1978]

EDITORIAL NOTE: For FEDERAL RE
tations affecting § 90.95, see the List
Sections Affected in the Finding
tion of this volume.

Subpart F—Radiolocation Se

§ 90.101 Scope.

The Radiolocation Service ac
dates the use of radio methods
termination of direction, d
speed, or position for purpose
than navigation. Rules as to el
for licensing, permissible com
tions, frequency available, a
special requirements are set f
the following section, except t
operation of Automatic Vehicl
toring (AVM) systems is gove
interim provisions set forth in

§ 90.103 Radiolocation Service.

(a) *Eligibility.* The following
are eligible for authorizations
Radiolocation Service to oper
tions to determine distance, di
speed, or position by means of
cation devices, for purposes ot
navigation:

(1) Any person engaged in a c
cial, industrial, scientific, educ
or local government activity

(2) A corporation or associati
will furnish radiolocation ser
other persons.

(3) A corporation that will fu
nonprofit radio communication
to its parent corporation, to
subsidiary of the same parent,
own subsidiary where the part
served is regularly engaged in
the eligibility activities set f
this paragraph.

(b) *Frequencies available.* T
lowing table indicates freq
available for assignment to sta
the Radiolocation Service, t
with the class of station(s) to
they are normally assigned, a
specific assignment limitations
are explained in paragraph (c)
section:

Radiolocation Service Frequency Table

Frequency or band	Class of station(s)	Limitation
Kilohertz:		
70 to 90	Radiolocation land or mobile.	1
90 to 110	Radiolocation land	2
110 to 130	Radiolocation land or mobile.	1
1605 to 1715	do	4, 5, 6, 28, and 29.
1715 to 1750	do	5, 6
1750 to 1800	do	5, 6, 7
1900 to 1950	do	6, 25, 26, 27, and 30.
1990 to 2000	do	6, 25, 27, and 30.
3230 to 3400	do	6, 8
Megahertz:		
420 to 450	do	21
2450 to 2500	do	9, 22, 23
2900 to 3100	do	10, 11
3100 to 3300	do	12
3300 to 3500	do	12, 13
3500 to 3700	do	12
5250 to 5350	do	12
5350 to 5460	do	10, 14
5460 to 5470	do	10, 15
5470 to 5600	do	10, 11
5600 to 5650	do	10, 16
8500 to 9000	do	12, 17
9000 to 9200	do	10, 14
9200 to 9300	do	12
9300 to 9500	do	10, 15, 18
9500 to 10,000	do	12
10,000 to 10,500	do	12, 13, 19
10,500 to 10,550	do	20, 22, 24
13,400 to 14,000	do	12
15,700 to 17,700	do	12
24,050 to 24,250	do	12, 22, 24
33,400 to 36,000	do	12

(c) Explanation of assignment limitations appearing in the frequency table of paragraph (b) of this section:

(1) This frequency band is shared with and stations operating in this frequency band in this service are on a secondary basis to stations licensed in the International Fixed Service and the Maritime Mobile Service.

(2) This frequency band is shared with and stations operating in this frequency band in this service are on a secondary basis to the LORAN Navigation System; all operations are limited to radiolocation lands stations in accordance with footnote US104, § 2.106 of this chapter.

(3) [Reserved]

(4) Non-Government radiolocation service in this band is on a secondary basis to stations in the Aeronautical Radionavigation Service operating on 1638 or 1708 kHz.

(5) Station assignments on frequencies in this band will be made subject to the conditions that the maximum output power shall not exceed 375 watts and the maximum authorized bandwidth shall not exceed 2 kHz.

(6) Because of the operation of stations having priority on the same or adjacent frequencies in this or in other countries, frequency assignments in this band may either be unavailable of may be subject to certain technical of operational limitations. Therefore, applications for frequency assignments in this band shall include information concerning the transmitter output power; the type and directional characteristics of the antenna and the minimum hours of operation (GMT).

(7) This band is shared with the Disaster Communications Service (part 99) and operations are on a secondary basis to that service between local sunset and local sunrise, or at any time during an actual or imminent disaster. Local sunrise and sunset times shall be derived from the 1946 American Nautical Almanac. Each frequency assignment in this band is on an exclusive basis within the daytime primary service area to which assigned. The daytime primary service area is the area where the signal intensities are adequate for radiolocation purposes during the hours from sunrise to sunset from all stations in the radiolocation system of which the station in question is a part; that is, the primary service area of the station coincides with the primary service area of the system. The normal minimum geographical separation between stations of different licensees shall be at least 580 km. (360 mi.) when the stations are operated on the same frequency or on different frequencies separated by less than 3 kHz. Where geographical separation of less than 580 km. (360 mi.) is desired under these circumstances it must be shown that the desired separation will result in protection ratio of at least 20 decibels throughout the daytime primary service area of other stations. Applications in this band are placed on public notice in accordance with § 1.962 of this chapter. Where the number of applicants requesting authority to serve

an area exceeds the number of frequencies available for assignment; or where it appears that fewer applicants or licensees than the number before it should be given authority to serve a particular area; or where it appears that an applicant, either directly or indirectly, seeks to use more than 25 kHz of the available spectrum space in this band, the applications may be designated for hearing.

(8) Frequencies in this band may only be assigned to radiolocation stations which are also assigned frequencies in the 1605–1800 kHz band, provided the use of frequencies in this band is necessary for the proper functioning of the particular radiolocation system. Operations in this band are on a secondary basis to stations operating in accordance with the Commission's table of frequency allocations contained in § 2.106 of this chapter.

(9) This band is allocated to the Radiolocation Service on a secondary basis to other fixed or mobile services and must accept any harmful interference that may be experienced from such services or from the industrial, scientific, and medical (ISM) equipment operating in accordance with part 18 of this chapter. In the 2483.5–2500 MHz band, no applications for new or modification to existing stations to increase the number of transmitters will be accepted. Existing licensees as of July 25, 1985, or on a subsequent date following as a result of submitting an application for license on or before July 25, 1985, are grandfathered and their operation is co-primary with the Radiodetermination Satellite Service.

(10) Speed measuring devices will not be authorized in this band.

(11) This frequency band is shared with and is on a secondary basis to the Maritime Radionavigation Stations (part 80) and to the Government Radiolocation Service.

(12) This frequency band is shared with and is on a secondary basis to the Government Radiolocation Service.

(13) Operations in this band are limited to survey operations using transmitters with a peak power not to exceed 5 watts into the antenna.

(14) This frequency band is shared with and is on a secondary basis to the Aeronautical Radionavigation Ser (part 87) and to the Government diolocation Service.

(15) The non-Government Radio cation Service in this band is secon ary to the Maritime Radionavigati Stations (part 80), the Aeronauti Radionavigation Service (part 87) a the Government Radiolocation Se ice.

(16) This frequency band is shar with and is on a secondary basis to t Maritime Radionavigation Statio (part 80) and the Government Meteo ological Aids Service.

(17) Operation in this frequen band is on a secondary basis to a borne Doppler radars at 8800 MHz.

(18) Radiolocation installations wi be coordinated with the Governme Meteorological Aids Service, and ins far as practicable, will be adjusted meet the needs of that service.

(19) Operations in this band are on secondary basis to the Amateur Ra Service (part 97). Pulsed emissions a prohibited.

(20) This band is restricted to rad location systems using type NON em sion with a power not to exceed watts into the antenna.

(21) Non-Government radiolocati stations in the band are secondary the Government Radiolocation Ser ice, the Amateur Radio Service a the Amateur-Satellite Service. Puls ranging radiolocation stations in th band may be authorized along th shorelines of Alaska and the contig ous 48 states. Radiolocation station using spread spectrum techniques ma be authorized in the band 420-4 MHz for operation within the contig ous 48 states and Alaska. Also, station using spread spectrum technique shall be limited to a maximum outp power of 50 watts, shall be subject t the applicable technical standards i § 90.209 until such time as more defin tive standards are adopted by th Commission and shall identify in a cordance with § 90.425(c)(3). Autho zations will be granted on a case-by case basis; however, operations pro posed to be located within the zone set forth in § 90.177(e) should no expect to be accommodated.

(22) For frequencies 2455, 10,52 and 24,125 MHz unmodulated continu-

ous wave (NON) emission only shall be employed and a frequency stability of at least 0.2 percent shall be maintained. Such stations shall be exempt from the requirements of §§ 90.403(c) and (f) and 90.429.

(23) Devices designed to operate as field disturbance sensors on frequencies between 2450 and 2500 MHz with a field strength equal to or less than 50,000 microvolts per meter at 30 meters, on a fundamental frequency, will not be licensed or type accepted for use under this part. Such equipment must comply with the requirements for field disturbance sensors as set forth in part 15 of this chapter.

(24) Devices designed to operate as field disturbance sensors on frequencies between 10,500 and 10,550 MHz and between 24,050 and 24,250 MHz, with field strength equal to or less than 250,000 microvolts per meter at 30 meters, on the fundamental frequency, will not be licensed or type accepted for use under this part. Such equipment must comply with the requirements for field disturbance sensors as set forth in part 15 of this chapter.

(25) Station assignments on frequencies in this band will be made subject to the conditions that the maximum output power shall not exceed 375 watts and the maximum authorized bandwidth shall not exceed 1.0 kHz.

(26) Each frequency assignment in this band is on an exclusive basis within the primary service area to which assigned. The primary service area is the area where the signal intensities are adequate for radiolocation purposes from all stations in the radiolocation system of which the station in question is a part; that is, the primary service area of the station coincides with the primary service area of the system. The normal minimum geographical separation between stations of different licensees shall be at lease 1200 mi. (1931 km.) when the stations are operated on the same frequency or on different frequencies separated by less than 1.0 kHz. Where geographical separation of less than 1200 mi. (1931 km.) is requested under these circumstances, it must be shown that the desired separation will result in a protection ratio of at least 20 decibels throughout the primary service area of other stations.

(27) Notwithstanding the bandwidth limitations otherwise set forth in this section of the rules, wideband systems desiring to operate in this band may use such bandwidth as is necessary for proper operation of the system provided that the field strength does not exceed 120 microvolts per meter per square root Hertz (120 uv/m/Hz½) at 1 mile. Such wideband operations shall be authorized on a secondary basis to stations operating within otherwise applicable technical standards. Applications for wideband systems in this band will be accepted beginning December 15, 1985.

(28) Since the 1605-1705 kHz band has been reallocated for AM broadcasting, no new assignments in the 1605-1705 kHz portion of this band shall be made after September 30, 1985.

(29) Beginning July 1, 1987, licensees of existing systems authorized frequencies in the 1605-1705 kHz portion of this band may request modification of their authorizations to change frequencies to the 1900-2000 kHz band.

(30) Until July 1, 1988, this band will be available only for licensees of existing systems operating in the 1605-1705 kHz portion of the 1605-1715 kHz band requesting modification of their authorizations to change frequencies to this band and for licensees of wideband systems. On July 1, 1988, requests for new station authorizations in this band will be accepted and, if necessary, will be subject to the random selection procedures outlined in § 1.972 of the Commission's Rules.

(d) *Additional frequencies for automatic vehicle monitoring (AVM) systems.* The frequency bands 903-904 MHz, 904-912 MHz, 918-926 MHz, and 926-927 MHz may be assigned for AVM operations in accordance with § 90.239 except that for corporations rendering service to others under paragraph (a)(2) of this section, such operations are limited to the 904-912 MHz and 918-926 MHz bands.

(e) *Other additional frequencies available.* Radiolocation stations in this service may be authorized, on request, to use frequencies allocated exclusively to Federal Government stations, in those instances where the Commission finds, after consultation with the appropriate Government agency or agencies, that such assignment is necessary or required for coordination with Government activities.

[43 FR 54791, Nov. 22, 1978]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 90.103, see the List of CFR Sections Affected in the Finding Aids section of this volume.

Subpart G—Applications and Authorizations

§ 90.111 Scope.

This subpart contains the procedures and requirements for the submission or filing of applications for authority to operate radio facilities under this part. The procedures described as those utilized by the Commission after receiving filed applications.

[51 FR 14996, Apr. 22, 1986]

§ 90.113 Station authorization required.

No radio transmitter shall be operated in the services governed by this part except under and in accordance with a proper authorization granted by the Commission.

§ 90.115 Ineligiblity of foreign governments.

No station authorization in the radio services governed by this part shall be granted to or held by a foreign government or its representative.

§ 90.117 Applications for radio station or radio system authorizations.

Persons desiring a radio station or radio system authorization must first submit the appropriate application(s). Prescribed application forms are listed in § 90.119. The Forms may be obtained from the Washington, DC office of the Commission, its Gettysburg, PA office, or from any of its engineering field offices. (See § 90.145 for information regarding special temporary authorizations.) Applicants for new stations comprising a land mobile radio system as defined in § 90.7 of this part, or applicants modifying or renewing a station that is a part of a system, may file an application for system authorization.

[47 FR 57051, Dec. 22, 1982]

§ 90.119 Application forms.

The following application form shall be used—

(a) Form 574 shall be used to appl

(1) For new base, fixed, or mobi station authorizations governed this part.

(2) For system authorizations, whe the system meets the requirements § 90.117.

(i) Application for a radio syste may be submitted on a single For 574.

(ii) If the control station(s) will ope ate on the same frequency as the mobile station, and if the height the control station(s) antenna(s) wi not exceed 6.1 meters (20 feet) abo ground or an existing man-made stru ture (other than an antenna stru ture), there is no limit on the numbe of such stations which may be author ized. Items 1 through 5 or Form 57 shall be completed showing the fr quency, the station class, the tota number of control stations, the emi sion, and the output power of the highest powered control station. Ap plicants for all control stations in the 470-512 MHz band must furnish the information requested in Items 1-11 Form 574.

(3) For modification or for modifica tion and renewal of an existing au thorization. (See § 90.135)

(4) For the Commission's consent the assignment of an authorization another person or entity. In additio the application shall be accompanie by a letter from the assignor settin forth his desire to assign all righ title, and interest in and to such au thorization, stating the call sign and location of the station, and that the assignor will submit his current sta tion authorization for cancellatio upon completion of the assignmen Form 1046 may be used in lieu of this letter.

(b) With respect to the 806-824/851-869 and 896-901/935-940 MHz bands all applications required by this sec tion to be filed on Form 574 shall be accompanied by Form 574-A.

(c) With respect to the frequencies below 27.5 MHz, all applications required by this section to be filed on Form 574 shall be accompanied by Form 574-B.

(d) Applications for stations on frequencies above 27.5 MHz in areas where international coordination is required may be accompanied by Form 574-B, but are not required to be. If the applicant files Form 574-B, the information concerning the proposed station that the Commission reports to the coordinating nation will be that provided on the Form. If the applicant does not file Form 574-B, the information concerning the proposed station that the Commission reports to the coordinating nation will be based on assumed technical characteristics determined by the Commission and described in instructions to Form 574. Specifically, the following stations are involved:

(1) Those north of Line A, or east of Line C if the application is for a frequency between 30 MHz and 470 and 929 and 930 MHz. Lines A and C are defined in § 90.7.

(2) Those requesting frequencies in the portion of the frequency bands allocated to both countries that overlap in the two geographical areas as defined in the U.S. Canada agreement, dated April 7, 1982, concerning the use of 800 MHz frequencies along the U.S.-Canada border.

(e) Form 405-A shall be used to:

(1) Apply for a renewal without modification of a station or system license when the licensee has not received renewal Form 574-R in the mail from the Commission within sixty (60) days of license expiration.

(2) Notify the Commission of a change in the licensee's name or mailing address that occurs during the license term. (See § 90.135(b).)

(3) Notify the Commission that the licensee has discontinued station operation and wishes to cancel the license. (See § 90.157.)

(f) A separate application shall be submitted on FCC Form 703 whenever it is proposed to change, as by transfer of stock ownership, the control of a corporate licensee.

(g) Form 572, Temporary Permit to Operate a Part 90 Radio Station, should be properly executed if the applicant is eligible and desires to operate his station pending the processing of his formal application (See also §§ 90.159, and 90.657).

(h) Form 574-R shall be used to apply for renewal of an existing authorization without modification of the station or system license. (Form 574-R is generated by the Commission and mailed to the licensee prior to the expiration of the license term.)

[43 FR 54791, Nov. 22, 1978, as amended at 44 FR 29070, May 18, 1979; 45 FR 59884, Sept. 11, 1980; 47 FR 41044, Sept. 16, 1982; 47 FR 57051, Dec. 22, 1982; 48 FR 36106, Aug. 9, 1983; 51 FR 14996, Apr. 22, 1986; 54 FR 4029, Jan. 27, 1989; 54 FR 39739, Sept. 28, 1989]

§ 90.121 Canadian registration.

Form 410 shall be filed by Canadian licensees desiring to operate in the United States under the terms of Article 2 and 3 of the Convention between the United States and Canada concerning operation of Certain Radio Equipment or Stations (which entered into force May 15, 1952). This form may be obtained from the Department of Communications, Ottawa, Canada. That department should also be consulted by U.S. licensees desiring to operate in Canada.

§ 90.123 Full disclosures.

(a) Each application shall contain full and complete disclosures with regard to the real party or parties in interest and as to all matters required to be disclosed by the application forms.

(b) Each application shall be clear and complete in itself without cross reference to information previously filed. An application for modification of an existing station must show in precise detail all particulars of the desired operation, including those not affected by the modification.

(c) Each application for digital voice emission shall only be made with the understanding that the applicant is responsible to disclose current encoding information to an FCC official at any time after station authorization. Disclosure shall be only upon request of the FCC official, and only for enforcement purposes. All authorizations for digital voice systems are issued subject to this requirement.

[43 FR 54791, Nov. 22, 1978, as amended at 47 FR 15340, Apr. 9, 1982]

§ 90.125 Who may sign applications.

(a) Except as provided in paragraph (b) of this section, applications, amendments thereto, and related statements of fact required by the Commission shall be personally signed by the applicant, if the applicant is an individual; by one of the partners, if the applicant is a partnership; by an officer or duly authorized employee if the applicant is a corporation; or by a member who is an officer, if the applicant is an unincorporated association. Applications, amendments, and related statements of fact filed on behalf of eligible government entities, such as states and territories of the United States and political subdivisions thereof, the District of Columbia, and units of local government, including incorporated municipalities, shall be signed by such duly elected or appointed officials as may be competent to do so under the laws of the applicable jurisdiction.

(b) Applications, amendments thereto, and related statements of fact required by the Commission may be signed by the applicant's attorney in fact in case of the applicant's physical disability or of his absence from the United States. The attorney shall in that event separately set forth the reason why the application is not signed by the applicant. In addition, if any matter is stated on the basis of the attorneys belief only (rather than his knowledge), he shall separately set forth his reasons for believing that such statements are true.

(c) Only the original of applications, amendments, or related statements of fact need be signed; copies must, however, conform in all other particulars to such originals.

(d) Applications, amendments, and related statements of fact need not be signed under oath. Willful false statements made therein, however, are punishable by fine and imprisonment, U.S. Code, Title 18, section 1001, and by appropriate administrative sanctions, including revocation of station license pursuant to section 312(a)(1) of
the Communications Act of
amended.

[43 FR 54791, Nov. 22, 1978, as am
54 FR 38680, Sept. 20, 1989]

§ 90.127 Submission and filing of
tions.

(a) All applications for priva
mobile licenses that require b
quency coordination and fees
forth at part 1, subppart G
chapter shall first be sent to th
fied coordinator for the radio
or frequency group concerned
the appropriate coordination
tachment of the statutory fe
applications shall be forwarded
appropriate address in acc
with § 0.401(b) of the rules. A
the certified frequency coord
may be obtained from the
Communications Commission,
burg, PA 17326.

(1) All applications for privat
mobile licenses that require fre
coordination but not a fee sh
sent to the certified coordinat
the radio service or frequency
concerned. After the appropria
ordination, such applications sh
forwarded to the Federal Comm
tions Commission, Gettysbur
17326.

(2) All applications for privat
mobile licenses that require a f
not frequency coordination sh
sent to the appropriate address
cordance with § 0.401(b) of the ru

(3) All applications for privat
mobile licenses that do not r
either frequency coordination or
shall be sent to the Federal Com
cations Commission, Gettysbur
17326.

(b) Unless otherwise specified,
plication should be filed at lea
days prior to the desired date of
mission action. Applications for r
al should be filed no more th
days nor less than 30 days prior t
end of the license term. When t
and sufficient application for re
of the license has been made, t
cense shall not expire until Com
sion action on the application
been completed.

(c) Each application shall limi
request for authorized mobile t
mitters to:

(1) Transmitters which will be installed and operated immediately after authorization issuance.

(2) Transmitters for which purchase orders have already been signed and which will be in use within eight months of the authorization date.

(3) In the Public Safety Radio Services and in the Special Emergency Radio Service for government entities only, to transmitters on which bid orders have been or will be sought and which will be in use within eight months of the authorization date, and to transmitters to be placed in operation later than eight months of the authorization date, pursuant to a specific implementation schedule which has been adopted by the appropriate final authorities of the applicant; and

(4) For operation in the 806-824/851-869 and 896-901/935-940 MHz bands, to transmitters authorized pursuant to § 90.629.

(d) Failure on the part of the applicant to provide all information required by the application form or to supply the necessary exhibits or supplementary statements may constitute a defect in the application.

[43 FR 54791, Nov. 22, 1978, as amended at 43 FR 59071, Dec. 19, 1978; 44 FR 27995, May 14, 1979; 47 FR 41044, Sept. 16, 1982; 51 FR 14996, Apr. 22, 1986; 52 FR 10231, Mar. 31, 1987; 54 FR 39739, Sept. 28, 1989]

§ 90.129 Supplemental information to be routinely submitted with applications.

Each application received by the Commission must be accompanied by the applicable information listed below:

(a) Evidence of frequency coordination as required by § 90.175.

(b) Description of any equipment proposed to be used if it does not appear on the Commission's current Radio Equipment List, Equipment Acceptable for Licensing, and designated for use under this part.

(c) A functional system diagram and a detailed description of the manner in which the interrelated stations will operate, if the station is part of a system involving two or more stations at different fixed locations.

(d) Applicants proposing to share their authorized transmitters pursuant to § 90.179 shall so indicate in their application.

(e) Applicants proposing to construct a radio station in the vicinity of radio astronomy observatories in West Virginia or in the vicinity of a radio receiving zone in Colorado must submit the statements prescribed by § 90.177.

(f) Statements required in connection with developmental operation, as specified in § 90.505.

(g) The environmental assessment required by §§ 1.1307 and 1.1311 of the rules, if applicable.

(h) Requests for authorization to communicate with foreign stations in accordance with § 90.19(c) or § 90.417;

(i) Showings required in connection with the use of frequencies as specified in subppart S.

(j) Any other statements or other data specifically required under special circumstances which are set forth in the applicable subpart of this part, by the particular form on which the application is filed or upon request by the Commission.

(k) If the applicant proposes to use a multiple-licensed transmitter, he must provide the name of the owner and the names and call signs of any other licensees of that transmitter.

(l) Applicants for new land stations to be interconnected with the public switched telephone network must indicate on their applications that their stations will be interconnected.

(m) Applicants requesting licenses to operate on frequencies pursuant to § 90.17(c)(25) must submit disaster communications plans containing the following information:

(1) A system network/system use diagram including a showing of emergency power and methods of deployment to all parts of the State or insular area;

(2) A designation of the responsible governmental authority within the State or insular area who will be the controlling agency for the licensee;

(3) A schedule of proposed drills and/or exercises by the participants;

(4) The number of frequencies in each band, and the type of emission required by the applicant;

(5) The distances expected to be covered within that State or insular area;

(6) The adjacent states and insular areas expected to be communicated with during a regional disaster or emergency;

(7) The point of contact for emergencies involving more than one State or insular area;

(8) The common frequency band(s) and number of frequencies in each band required for interstate communication, and the point(s) of contact for these adjacent States or insular areas;

(9) The format and emission parameters of radio teletype transmissions to be used for interstate communications.

(n) All applications for renewal of base/mobile station licenses by licensees who also operate radiolocation transmitters, or wildlife tracking telemetry transmitters as described in § 90.25(f), must include a statement detailing the number of units in service, by frequency, on Radiolocation or Forestry-Conservation Radio Service frequencies at the time the renewal application is filed.

(o) Applicants requesting licenses to operate on frequencies pursuant to §§ 90.63(d)(1), 90.65(c)(1), 90.73(d)(1) and 90.81(d)(14) must submit communications plans containing the following information:

(1) A description of the communication requirement sufficient to demonstrate that no alternative to the link is appropriate and that there is no reasonable way to abbreviate the link;

(2) The frequency bands and the number of frequencies necessary for the link(s);

(3) The name and phone number of the person(s) responsible for ceasing operations of the licensee's stations in the event of interference; and,

(4) Where the link(s) provides a standby backup circuit for another communications circuit, a brief description of the supported circuit and its vulnerability to disruption.

(Secs. 4, 303, 307, 48 Stat., as amended, 1066, 1082, 1083; 47 U.S.C. 154, 303, 307)

[43 FR 54791, Nov. 22, 1978]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 90.129, see the List of CFR Sections Affected in the Finding Aids section of this volume.

§ 90.131 Amendment or dismissal of applications.

(a) Any application, except for mutually exclusive applications or those against which a petition to deny has been filed, may be amended as a matter of right at any time prior to the time the application is granted or designated for hearing. Each amendment to an application shall be signed and submitted in the same manner as required for the original application. The procedures for amending applications mutually exclusive under this part, applications against which a petition to deny has been filed, and applications designated for hearing are set forth in § 1.918.

(b) Any application may, upon written request signed by the applicant or his attorney, be dismissed without prejudice as a matter of right prior to the time the application is granted or designated for hearing.

§ 90.135 Modification of license.

(a) The following changes in authorized stations require an application for modification of license:

(1) Change in frequency.

(2) Change in the type of emission.

(3) Change in power from that authorized.

(4) Change in antenna height from that authorized.

(5) Change in the location or number of base stations, fixed, control, or mobile transmitters from that authorized, including area of mobile operations.

(6) Change in the class of a land station, including changing from multiple licensed to cooperative use, and from shared to unshared use.

(7) Any change in ownership, control, or corporate structure.

(8) Change by 50 or more units in the number of paging receivers.

(b) The following changes in authorized stations do not require an application for modification of license.

(1) Change in mailing address of licensee.

(2) Change of name only of licensee without changes in ownership, control or corporate structure.

(3) Change in the number and location of station control points or of

stations operating below 470 or ve 800 MHz meeting the require- its of § 90.119(a)(2)(ii).

) Change in the number of mobile s operated by Radiolocation Serv- licensees.

) Any other changes not listed in agraph (a) of this section.

) Unless specifically exempted in .175, requests for modifications d in paragraph (a) of this section t be submitted on Form 574 to the licable frequency coordinator.

) In case of a change listed in para- ph (b)(1) or (2) of this section, the nsee must notify the Commission nediately. Notification may be by m 405-A or by letter. The letter t contain the name and address of licensee as they appear in the nmission's records, the new name ddress, the call signs and classes of adio stations authorized to the li- see under this part and the radio ice in which each station is au- rized. The completed and signed m 405-A or the letter must be sent Federal Communication Commis- , Gettysburg, PA 17326. Licensees se licenses are due for renewal and have received the renewal Form R in the mail from the Commis- must use the appropriate boxes hat form to notify the Commission change listed in paragraph (b)(1) 2) of this section.

) In the case of a change listed in agraphs (b)(3), (4), and (5) of this ion, the licensee must notify the mission within 30 days of the nge. The notice may be filed on Form 574 or may be contained in tter specifying the nature of the nge, the name and address of the nsee as appearing on Commission rds, and the call sign, class, and o service of the station. The notice t be sent to: Federal Communica- s Commission, Gettysburg, PA 26.

) Any change that requires a fee as orth at part 1, subppart G of this pter must be filed in accordance § 1.912 (b) or § 1.912 (b)(2) of the s.

FR 14997, Apr. 22, 1986, as amended at R 36014, Oct. 8, 1986; 52 FR 10232, Mar. 987; 54 FR 38680, Sept. 20, 1989]

§ 90.137 Applications for operation at temporary locations.

(a) An application for authority to operate a base or a fixed transmitter at temporary locations shall be filed in accordance with the following:

(1) When one or more individual transmitters are to be operated by a licensee as a base station or as a fixed station at unspecified or temporary locations for indeterminate periods, such transmitters may be considered to comprise a single station intended to be operated at temporary locations.

(2) The application must specify the general georgaphic area within which the operation will be confined. The area may be specified as a city, a county or counties, a state or states or other definable geographic area such as a specified radius in miles of a particular city or known geographic site.

(3) Applications for operation at temporary locations exceeding 180 days must be accompanied by evidence of frequency coordination.

(b) When any unit or units of a base station or fixed station which are authorized for operation at temporary locations actually remain or are intended to remain at the same location for more than 1 year, an application for a separate authorization specifying the fixed location shall be made as soon as possible, but not later than 30 days after the expiration of the 1-year period.

[43 FR 54791, Nov. 22, 1978, as amended at 45 FR 63862, Sept. 26, 1980; 51 FR 14997, Apr. 22, 1986]

§ 90.138 Applications for itinerant frequencies.

An application for authority to conduct an itinerant operation in the Business or Special Industrial Radio Services must be restricted to use of itinerant frequencies or other frequencies not designated for permanent use and need not be accompanied by evidence of frequency coordination. Users should be aware, however, that no protection is provided from interference from other itinerant operations.

[44 FR 32218, June 5, 1979]

§ 90.139 Commission processing of applications.

(a) Applications received for filing are given a file number. The assignment of a file number to an application is for administrative convenience and does not indicate the acceptance of the application for filing and processing.

(b) Applications which are incomplete with respect to answers, supplementary statements, execution, or other matters of a formal character shall be deemed defective and may be dismissed. In addition, if an applicant is requested to file any additional documents or information not included in the prescribed application form, failure to comply with such request will render the application defective and it may be dismissed. Applications will also be deemed to be defective and be dismissed in the following cases:

(1) Statutory disqualification of applicant;

(2) Proposed use or purpose of station would be unlawful;

(3) Requested frequency is not allocated for assignment for the service proposed.

(c) Applications which are not in accordance with the provisions of this chapter, or other requirements of the Commission, will be considered defective and may be dismissed unless accompanied by a request in accordance with § 90.151 of this part.

[43 FR 54791, Nov. 22, 1978, as amended at 51 FR 14997, Apr. 22, 1986]

§ 90.141 Resubmitted applications.

Any application received by the Commission for frequencies below 470 MHz which has been returned by the Commission to the applicant for correction will be processed in its original position in the processing line if it is resubmitted and received by the Commission within 60 days from the date on which it was returned to the applicant. Otherwise it will be treated as a new application for the purpose of processing considerations. An application received by the Commission for frequencies above 470 MHz which has been returned by the Commission to the applicant will be processed in its original position in the processing line if it is resubmitted and received by Commission within 30 days (45 d outside the continental United Sta from the date on which it was turned to the applicant. Otherwis will be treated as a new application the purpose of processing cons ations.

[51 FR 14997, Apr. 22, 1986]

§ 90.143 Grants of applications.

(a) The Commission will grant application for a station authorizati without a hearing if it is in prop form, and conforms with all rule quirements, and would serve th public interest, convenience or neces ty.

(b) All applications in pending sta will be processed in the order in whic the application acceptable for fil was received by the Commission; pr vided, however, that if there are mo applications than can be accommod ed on available frequencies, the Co mission may grant the applicatio pursuant to the system of random se lection prescribed in § 1.972 of th chapter.

(c) The Commission may grant an application in part, or add privilege terms or conditions not requeste When such action is taken without a hearing, the applicant may accept th authorization as granted, or ma return it to the Commission alon with a written request for a hearin Any such request for hearing must b made within 30 days from the date o the grant, or from its effective date, i a later date is specified. Upon recei of a request for hearing, the Commi sion will vacate the grant and desi nate the application for hearing in th usual manner.

[43 FR 54791, Nov. 22, 1978, as amended a 48 FR 27207, June 13, 1983]

§ 90.145 Special temporary authority.

(a) In circumstances requiring th temporary use of radio facilities, th Commission may issue special tempo rary authority for new or modified op erations. A request for special tempo rary authority may be made in lette form signed in accordance wit § 90.125 of this part. It should be sub mitted, in duplicate, at least 10 day ior to the date of the proposed oper-ion. However, in cases of emergency volving danger to life or property, or ne to damage to equipment, the re-iest may be made by telephone, tele-aph or facsimile transmission under e condition that a letter request is bmitted within the following 10 ys. All requests for special tempo-ry authority shall be clear and com-ete within themselves and shall not ly on any pending application.

(b) Every request for special tempo-ry authority should contain the fol-wing information:

(1) Name and address of the appli-nt;

(2) Need for special action, including description of any emergency or mage of equipment;

(3) Type of operation to be conduct- (such as field test, dispatching etc.);

(4) Purpose of operation;

(5) Times and dates of operation;

(6) Class of station and name of dio service;

(7) Location, including geographical ordinates if known, of transmitter d/or mobile area of operations;

(8) Number of fixed transmitters d number of mobile units;

(9) Operating frequency;

(10) Output power of the transmit-r;

(11) Type of emission;

(12) Description of antenna, includ-g height above ground and power in;

(13) Statement of eligibility for a dio service under this part.

(c) Requests for special temporary thority to operate for periods ex-eding 180 days require evidence of equency coordination. Requests for orter periods do not require coordi-tion and, if granted will be author-ed on a secondary, non-interference sis.

3 FR 54791, Nov. 22, 1978, as amended at FR 11717, Mar. 21, 1983; 51 FR 14997, r. 22, 1986]

0.147 Mailing address furnished by licensee.

Each application shall set forth and ch licensee shall furnish the Com-ission with an address in the United ates to be used by the Commission serving documents or directing correspondence to that licensee. Unless any licensee advises the Commission to the contrary, the address contained in the licensee's most recent application will be used by the Commission for this purpose.

§ 90.149 License term.

(a) Licenses for stations authorized under this part will be issued for a term not to exceed five years from the date of the original issuance, modification or renewal.

(b) Authorizations for stations engaged in developmental operation under subppart Q of this part will be issued upon a temporary basis for a specific period of time, but in no event to extend beyond 1 year from date of original issuance, modification or renewal.

[43 FR 54791, Nov. 22, 1978, as amended at 49 FR 36376, Sept. 17, 1984]

§ 90.151 Requests for waiver.

(a) Requests for waiver of the rules in this part shall state the nature of the waiver or exception desired, and set forth reasons in support thereof including a showing that unique circumstances are involved and that there is no reasonable alternative solution within existing rules. When related to a specific application the submission and filing procedures of § 90.127 also apply.

(b) Applications may be dismissed if the accompanying petition for waiver of the rules does not set forth reasons which, sufficient if true, would justify a waiver or exception.

(c) Applicants requiring expeditious processing of their request for waiver, shall, pursuant to § 1.931 of this chapter, clearly caption both their request for waiver and the envelope containing it with the words "WAIVER—TIMELY ACTION REQUESTED."

(d) Requests for waiver of the rules not related to a specific application shall be submitted to the Federal Communications Commission, Gettysburg, PA 17326. (Waiver requests associated with and attached to specific applications that require a fee as set forth at part 1, subppart G of this chapter must be filed in accordance with § 0.401(b) of the rules. See also § 0.482 of the rules.)

(Sec. 4(i), Communications Act of 1934, as amended, 47 U.S.C. 154(i), and the authority delegated to the Managing Director by § 0.231 of the Commission's Rules, 47 CFR 0.231)

[49 FR 20292, May 14, 1984, as amended at 51 FR 14997, Apr. 22, 1986; 52 FR 10232, Mar. 11, 1987]

§ 90.153 Transfer or assignment of station authorization.

A station authorization and the rights it grants shall not be transferred, assigned, or in any manner disposed of to any person, unless the Commission shall, after obtaining full information, decide that the transfer, assignment, or disposal is in the public interest, convenience or neccessity and give its consent in writing.

§ 90.155 Time in which station must be placed in operation.

(a) All stations authorized under this part, except as provided in paragraph (b) and in §§ 90.629 and 90.631(c), must be placed in operation within 8 months from the date of grant or the authorization cancels automatically and must be returned to the Commission.

(b) For local government entities only, a period longer than eight months for placing a station in operation may be authorized by the Commission on a case-by-case basis, where the applicant submits a specific schedule for the completion of each portion of the entire system, along with a showing that the system has been approved and funded for implementation in accordance with that schedule. See also §§ 90.631 and 90.633.

[45 FR 81208, Dec. 10, 1980, as amended at 47 FR 41044, Sept. 16, 1982; 48 FR 51927, Nov. 15, 1983; 54 FR 4030, Jan. 27, 1989]

§ 90.157 Discontinuance of station operation.

(a) If a station licensed under this part discontinues operation on a permanent basis, the licensee shall forward the station license to the Federal Communications Commission, Gettysburg, Pennsylvania 17326 for cancellation. Alternatively, the licensee may notify the Commission by checking the appropriate box on Form 405-A that he/she has discontinued station operation and requests license cancellation. The Form 405-A shall be sent to the Commission's offices in Gettysburg, Pennsylvania.

(b) Licensees whose licenses are due for renewal and who have received the Form 574-R in the mail from the Commission, shall use the appropriate box on that Form the notify the Commission that they have discontinued station operation and wish to cancel their license.

(c) For the purposes of this section, any station which has not operated for 1 year or more is considered to have been permanently discontinued.

[48 FR 36106, Aug. 9, 1983, as amended at 5 FR 38680, Sept. 20, 1989]

§ 90.159 Temporary and conditional permits.

(a) An applicant for a private land mobile station license utilizing an already authorized facility may operate the radio station(s) for a period of up to 180 days under a temporary permit evidenced by a properly executed temporary license certificate (Form 572) after submitting or filing a formal application for station license in accordance with § 90.127, provided that all the antennas employed by control stations are twenty feet or less above ground or twenty feet or less above a man-made structure other than an antenna tower to which it is affixed. When required by § 90.175, applications must be accompanied by evidence of frequency coordination. The temporary operation of stations, other than mobile stations within the Canadian coordination zone is limited to stations with a maximum of 5 watts effective radiated power and a maximum antenna height of 6.1 meters (20 ft.) above average terrain.

(b) An applicant proposing to operate a new private land mobile radio station or modify an existing station below 470 MHz or in the one-way paging 929-930 MHz band that is required to submit a frequency recommendation pursuant to § 90.175 (a) through (e) may operate the proposed station during the pendency of its application for a period of up to 180 days under a conditional permit upon the filing of a properly completed formal application that complies with § 90.127 if the application is accompanied by evidence of frequency coordination in accordance with §§ 90.175 and 90.176, and provided that the applicant certifies that the following conditions are satisfied:

(1) The proposed station location is south of Line A or west of Line C as defined in § 90.7.

(2) The proposed antenna structure has been previously studied by the Federal Aviation Administration and determined to pose no hazard to aviation safety as required by § 17.4 of the Commission's Rules; or the proposed antenna or tower structure does not exceed 6.1 meters (20 feet) above ground level or above an existing man-made structure (other than an antenna structure), if the antenna or tower has not been previously studied by the Federal Aviation Administration and cleared by the FCC.

(3) The grant of the application does not require a waiver of the Commission's Rules.

(4) The applicant has determined that the proposed facility will not significantly affect the environment as defined in § 1.1307.

(5) The applicant has determined that the proposed station affords the level of protection to radio "quiet" zones and monitoring facilities as specified in § 90.177.

(6) The applicant has submitted an application to the Commission stating the frequency the applicant intends to use and that the frequency coordination requirements specified in §§ 90.175 and 90.176 for selection and use of this frequency have been satisfied.

(c) An applicant proposing to operate an itinerant station, or, an applicant seeking the assignment of authorization or transfer of control of a license for an existing station operating below 470 MHz, or in the 929-930 MHz band, may operate the subject station during the pendency of the application for a period not to exceed 180 days under a conditional permit upon the filing of a properly completed formal application that complies with § 90.127. Conditional authority ceases immediately if the application is returned by the Commission because it is not acceptable for filing. All other categories of applications listed in § 90.175(f) that do not require evidence of frequency coordination are excluded from the provisions of this rule section.

(d) A conditional authorization pursuant to paragraphs (b) and (c) of this section is evidenced by retaining the original executed conditional licensing 572C Certification Form with the station records. Conditional authorization does not prejudice any action the Commission may take on the subject application. Conditional authority is accepted with the express understanding that such authority may be modified or cancelled by the Commission at any time without hearing if, in the Commission's discretion, the need for such action arises. Consistent with § 90.175(d), the applicant assumes all risks associated with operation under conditional authority, the termination or modification of conditional authority, or the subsequent dismissal or denial of its application. Authority reverts back to the original licensee if an assignee or transferee's conditional authority is cancelled.

(e) The transmissions of new stations operating pursuant to conditional authority shall be identified by a temporary call sign consisting of the prefix "WT" followed by the applicant's local seven digit business telephone number as provided in § 2.302. Transmissions by applicants for the modification, assignment of authorization or transfer of control of an existing station shall be identified by the station's call sign.

[51 FR 14997, Apr. 22, 1986, as amended at 54 FR 50239, Dec. 5, 1989]

Subpart H—Policies Governing the Assignment of Frequencies

§ 90.171 Scope.

This subpart contains detailed information concerning the policies under which the Commission assigns frequencies for the use of licensees under this part, frequency coordination procedures, and procedures under which licensees may cooperatively share radio facilities.

§ 90.173 Policies governing the assignment of frequencies.

(a) The frequencies which ordinarily may be assigned to stations in the services governed by this part are listed in subparts B, C, D, E, and F of this part. Except as otherwise specifically provided in this part, frequencies assigned to land mobile stations are available on a shared basis only and will not be assigned for the exclusive use of any licensee.

(b) All applicants and licensees shall cooperate in the selection and use of frequencies in order to reduce interference and make the most effective use of the authorized facilities. Licensees of stations suffering or causing harmful interference are expected to cooperate and resolve this problem by mutually satisfactory arrangements. If the licensees are unable to do so, the Commission may impose restrictions including specifying the transmitter power, antenna height, or area or hours of operation of the stations concerned. Further the use of any frequency at a given geographical location may be denied when, in the judgment of the Commission, its use in that location is not in the public interest; the use of any frequency may be restricted as to specified geographical areas, maximum power, or such other operating conditions, contained in this part or in the station authorization.

(c) Frequencies allocated for Federal Government radio stations under Executive order of the President may be authorized for the use of stations in these services upon appropriate showing by the applicant that such assignment is necessary for inter-communication with government stations or required for coordination with activities of the Federal Government, and where the Commission finds, after consultation with the appropriate government agency or agencies, that such assignment is necessary.

(d) The radio facilities authorized under this part are intended for use in connection with and as an adjunct to the primary governmental or business activities of the licensee.

(e) Persons requesting a
operate in the band 25-50 M
recognize that this band is s
various services in other cou
that harmful interference
caused by the propagation
in this band from distant st
protection from such harmf
ence generally can be expect

(f) In the 150-170 MHz ba
in the Taxicab Radio Servi
narrowband operations
under § 90.271, application
ordinarily be granted in sit
which the proposed base st
cated less than 16 km (10 m
an existing base station on
cy 15 kHz removed, unless th
tion is accompanied by a sig
of concurrence from the li
each base station located wit
(10 miles) of the proposed ba
that is operated on a frequen
removed from the proposed
assignment. In the Taxic
Service, applications will not
ly be granted in situations
the proposed base station
less than 12 km (7 miles from
ing base station on a frequen
removed, unless the applicat
companied by a signed lette
currence from the licensee
base station located within
miles) of the proposed bas
that is operated on a frequen
removed from the proposed f
assignment.

(g) In the States of Al
Hawaii, and in areas outside t
nental limits of the United S
the adjacent waters, the fre
above 150.8 MHz which are li
where in this part as availab
signment to base stations o
stations in the Industrial a
Transportation Radio Service,
available for assignment to o
al fixed stations in the same
on a secondary basis.

(h) In the Public Safety
listed in subpart B, base stati
be authorized to operate on a
ary basis on frequencies be
MHz which are available to mo
tions.

(i) In the 450-470 MHz band,
quencies are ordinarily assi
pairs, with the mobile station t

frequency 5 MHz above the paired base station transmit frequency. In the 470-512 MHz band, the frequencies are ordinarily assigned in pairs with the mobile station transmit frequency 3 MHz above the paired base station transmit frequency. In the Taxicab Radio Service, in the 150 MHz range, the frequencies may be assigned in pairs with the separation between base and mobile frequencies being 5.26 MHz. A mobile station may be assigned the frequency which would normally be assigned to a base station for single-frequency operation. However, this single-frequency operation may be subject to interference that would not occur to a two-frequency system.

(j) Except for those frequencies that are not allocated to the Private Land Mobile Radio Services on a primary basis and those frequencies shared with the Federal Government, frequencies allocated to specific services and listed in the tables in subparts B, D, and E may also be available for assignment in services other than those to which they are allocated provided that such interservice sharing assignments meet the requirements of § 90.176 or 90.261 of the rules.

(Secs. 4, 303, 307, 48 Stat., as amended, 1066, 1082, 1083; 47 U.S.C. 154, 303, 307)

[43 FR 54791, Nov. 22, 1978, as amended at 45 FR 43419, June 27, 1980; 46 FR 55704, Nov. 12, 1981; 50 FR 13605, Apr. 5, 1985; 54 FR 39739, Sept. 28, 1989]

§ 90.175 Frequency coordination requirements.

Except for applications listed in paragraph (f) of this section, each application for a new frequency assignment, for a change in existing facilities as listed in § 90.135 (a), for a reinstatement of an authorization expired for more than 6 months, or for operation at temporary locations in accordance with § 90.137, must include a showing of frequency coordination as set forth below. When frequencies are shared by more than one service, concurrence must be obtained from the other applicable certified coordinators.

(a) For frequencies between 25 and 470 MHz. A statement from the applicable frequency coordinator recommending the most appropriate frequency. The coordinator's recommendation may appropriately include comments on technical factors such as power, antenna height and gain, terrain, and other factors which may serve to mitigate potential interference. Except for narrowband operations, the coordinator must not recommend any adjacent channel frequency 15 kHz removed to existing stations which would result in a separation of less than 10 miles, or 7 miles in the Taxicab Radio Service. If the frequency recommended is in the 150-170 MHz band, and is 17.5 kHz or less removed from a frequency which is available to another radio service, the coordinator's statement must show that approval has been received from the coordinator for the other service. Coordination with another service is not required, however, for narrowband assignments more than 5 kHz removed from other narrowband assignments.

(b) For frequencies between 470 and 512 MHz, 806-824/851-869 MHz, and 896-901/935-940 MHz: A statement from the applicable coordinator recommending specific frequencies that are available for assignment in accordance with the loading standards and mileage separations applicable to the specific radio service or category of user involved.

(c) For frequencies in the 929-930 MHz band. A statement from the coordinator recommending the most appropriate frequency.

(d) Any recommendation submitted in accordance with paragraphs (a), (b) or (c) of this section is advisory in character and is not an assurance that the Commission will grant a license for operation on that frequency. Therefore, applicants are strongly advised not to purchase radio equipment operating on specific frequencies until a valid authorization has been obtained from the Commission.

(e) Applications for facilities near the Canadian border north of line A or east of line C in Alaska may require coordination with the Canadian government. See § 1.955 of this chapter.

(f) The following applications need not be accompanied by evidence of frequency coordination:

(1) Applications for frequencies below 25 MHz.

(2) Applications for a Federal Government frequency.

(3) Applications for frequencies in the 72-76 MHz band except for mobile frequencies listed in §§ 90.67(c)(34), 90.73(d)(7), 90.79(d)(4), and 90.91(c)(2).

(4) Applications for a frequency to be used for developmental purposes.

(5) Applications in the Special Industrial Radio Service or the Business Radio Service requesting a frequency designated for itinerant operation only.

(6) Applications in the Radiolocation Service.

(7) [Reserved]

(8) Applications for frequencies listed in the SMR tables contained in §§ 90.617 and 90.619.

(9) Applications indicating license assignments such as change in ownership, control or corporate structure if there is no change in technical parameters.

(10) Applications for mobile stations operating in the 470-512 MHz band or above 800 MHz if the frequency pair is assigned to a single system on an exclusive basis in the proposed area of operation.

(11) Applications for add-on base stations in multiple licensed systems operating in the 470-512 MHz band or above 800 MHz if the frequency pair is assigned to a single system on an exclusive basis.

(12) Applications for control stations operating below 470 or above 800 MHz and meeting the requirements of § 90.119(a)(2)(ii).

(13) Applications for frequencies in the 216-220 and 1427-1435 MHz bands.

[51 FR 14998, Apr. 22, 1986, as amended at 51 FR 36014, Oct. 8, 1986; 53 FR 1024, Jan. 15, 1988; 54 FR 4030, Jan. 27, 1989; 54 FR 39740, Sept. 28, 1989]

§ 90.176 Interservice sharing of frequencies in the 150-174 and 450-470 MHz bands.

(a) Local governmental entities eligible in the Public Safety and Special Emergency Radio Services governed by this rule part may apply to use any of the frequencies allocated to these services excluding those allocated to the Special Emergency Radio Services. Applications must be accompanied by:

(1) A determination by the appl
ble frequency coordinator that th
are no satisfactory frequencies a
able within the applicant's own r
service in the area of desired o
ation;

(2) A demonstration that
frequency(s) requested in anot
radio service are not assigned in t
radio service in the area of desired
eration.

(3) A statement from the freque
coordinator having responsibility
coordination in the radio service
group in which the frequency is
signed concurring in its assignment
the manner requested. In cases wh
concurrence is not given, the coordi
tor must provide an explanation
why the requested sharing is inapp
priate.

(4) A statement or showing that t
proposed use of the assignment w
not violate any of the technical limi
tions applicable in the service or se
ices to which the frequency is regul
ly allocated.

(b) Non-governmental entities eli
ble in the Special Emergency Ra
Service and eligibles in the Industr
and Land Transportation Radio Se
ices governed by this part may app
to use any of the frequencies allocat
to these services (excluding those al
cated to the Special Emergency Rad
Service). Applications must be accon
panied by:

(1) A determination by the applic
ble frequency coordinator that the
are no satisfactory frequencies avai
able within the applicant's own rad
service in the area of desired ope
ation;

(2) A demonstration that th
frequency(s) requested in anothe
radio service are not assigned in tha
radio service in the area of desired op
eration;

(3) A statement from the frequenc
coordinator having responsibility fo
coordination in the radio service o
group in which the frequency in ques
tion is assigned concurring in its as
signment in the manner proposed. In
cases where concurrence cannot be
given, the coordinator must provide an
explanation of why sharing is inappro
priate.

(4) A statement or showing that the proposed use of the assignment will not violate any of the technical limitations applicable in the service or services to which the frequency is regularly allocated.

(Secs. 4, 303, 307, 48 Stat., as amended, 1066, 1082, 1083; 47 U.S.C. 154, 303, 307)

[46 FR 55704, Nov. 12, 1982, as amended at 51 FR 14998, Apr. 22, 1986; 54 FR 39740, Sept. 28, 1989]

§ 90.177 Protection of certain radio receiving locations.

This section pertains to applications for new or modified authorizations in the vicinity of the National Radio Astronomy Observatory, Green Bank, Pocahontas County, WV, the Naval Radio Research Observatory, Sugar Grove, Pendleton County, WV, the Table Mountain Radio receiving zone, Boulder, CO, the Federal Communications Commission monitoring stations and other protected sites.

(a) Any applicant for a new permanent base or fixed station, or for a modification of an existing authorization which would change the frequency, power, antenna height, directivity, or location within the boundaries described in paragraph (b) of this section shall notify the Director, National Radio Astronomy Observatory, P.O. Box 2, Green Bank, WV 24944, in writing, of the technical parameters of the proposal.

(1) The notification shall be made prior to, or simultaneously with the filing of the application with the Commission.

(2) The notification shall state the geographical coordinates of the antenna, antenna height, antenna directivity, proposed frequency, type of emission, and effective radiated power.

(3) After receipt of such applications, the Commission will allow a period of 20 days for comments or objections in response to the notifications indicated. If an objection to the proposed operation is received during the 20-day period from the National Radio Astronomy Observatory for itself or on behalf of the Naval Radio Research Observatory, the Commission will consider all aspects of the problem and take whatever action is deemed appropriate.

(4) The provisions of this paragraph do not apply to applications for mobile, temporary base, or temporary fixed stations.

(b) The area of concern for the National Radio Astronomy Observatory or the Naval Radio Research Observatory is the area bounded by 39°15′ N. on the north, 78°30′ W. on the east, 37°30′ N. on the south, and 80°30′ W. on the west.

(c) Protection for Table Mountain Radio Receiving Zone, Boulder County, Colorado. Applicants for a station authorization to operate in the vicinity of Boulder County, Colorado under this part are advised to give due consideration, prior to filing applications, to the need to protect the Table Mountain Radio Receiving Zone from harmful interference. These are the research laboratories of the Department of Commerce, Boulder County, CO. To prevent degradation of the present ambient radio signal level at the site, the Department of Commerce seeks to ensure that the field strengths of any radiated signals (excluding reflected signals) received on this 1800 acre site (in the vicinity of coordinates 40°07′50″ N Latitude, 105°14′40″ W Longitude) resulting from new assignments (other than mobile stations) or from the modification or relocation of existing facilities do not exceed the following values:

Frequency range	Field strength (millivolt per meter) in authorized bandwidth of service	Power flux density[1] (dBW per square meter) in authorized bandwidth of service
Below 540 kHz	10	65.8
540 to 1600 kHz	20	59.8
1.6 to 470 MHz	10	65.8
470 to 890 MHz	30	56.2
Above 890 MHz	1	85.8

[1] Equivalent values of power flux density are calculated assuming free space characteristic impedance of $376.7 = 120\pi$ ohms.

(1) Advance consultation is recommended particularly for those applicants who have no reliable data which indicates whether the field strength or power flux density figures in the above table would be exceeded by their proposed radio facilities (except

mobile stations). In such instances, the following is a suggested guide for determining whether coordination is recommended:

(i) All stations within 2.4 km (1.5 statute miles);

(ii) Stations within 4.8 km (3 statute miles) with 50 watts or more effective radiated power (ERP) in the primary plane of polarization in the azimuthal direction of the Table Mountain Radio Receiving Zone;

(iii) Stations within 16 km (10 statute miles) with 1 kW or more ERP in the primary plane of polarization in the azimuthal direction of the Table Mountain Receiving Zone;

(iv) Stations within 80 km (50 statute miles) with 25 kW or more ERP in the primary plane of polarization in the azimuthal direction of the Table Mountain Receiving Zone.

(2) Applicants concerned are urged to communicate with the Radio Frequency Management Coordinator, Department of Commerce, Research Support Services, NOAA R/E5X2, Boulder Laboratories, Boulder, CO 80303; telephone (303) 497-6548, in advance of filing their applications with the Commission.

(3) The Commission will not screen applications to determine whether advance consultation has taken place. However, applicants are advised that such consultation can avoid objections from the Department of Commerce or proceedings to modify any authorization which may be granted which, in fact, delivers a signal at the site in excess of the field strength specified herein.

(d) Protection for Federal Communications Commission monitoring stations:

(1) Applicants in the vicinity of an FCC monitoring station for a radio station authorization to operate new transmitting facilities or changed transmitting facilities which would increase the field strength produced over the monitoring station over that previously authorized are advised to give consideration, prior to filing applications, to the possible need to protect the FCC stations from harmful interference. Geographical coordinates of the facilities which require protection are listed in § 0.121(c) of
the Commission's Rules. Appl
for stations (except mobile s
which will produce on any frequ
direct wave fundamental
strength of *greater than 10 m*
the authorized bandwidth of
(-65.8 dBW/m^2 power flux den
suming a free space characteris
pedance of 120 times pi, or 377,
at the referenced coordinates,
examined to determine extent of
ble interference. Depending o
theoretical field strength valu
existing root-sum-square or othe
bient radio field signal levels at
dicated coordinates, a clause pr
ing the monitoring station m
added to the station authorizatio

(2) In the event that calcu
value of expected field exceeds 1
m (-65.8 dBW/m^2) at the refe
coordinates, or if there is any qu
whether field strength levels
exceed the threshold value, ad
consultation with the FCC to d
any protection necessary shou
considered. Prospective appli
may communicate with: Chief,
Operations Bureau, Federal Comm
cations Commission, Washington,
20554, Telephone (202) 632-6980.

(3) Advance consultation is sug
ed particularly for those applic
who have no reliable data which
cates whether the field strengt
power flux density figure indic
would be exceeded by their propo
radio facilities (except mobile
tions). In such instances, the follow
is a suggested guide for determin
whether an applicant should coo
nate:

(i) All stations within 2.4 kilome
(1.5 statute miles);

(ii) Stations within 4.8 kilometers
statute miles) with 50 watts or m
average effective radiated po
(ERP) in the primary plane of po
ization in the azimuthal direction
the Monitoring Stations;

(iii) Stations within 16 kilome
(10 statute miles) with 1 kW or mo
average ERP in the primary plane
polarization in the azimuthal directi
of the Monitoring Station;

(iv) Stations within 80 kilometers
statute miles) with 25 kW or more
erage ERP in the primary plane of

larization in the azimuthal direction of the Monitoring Station.

(4) Advance coordination for stations operating above 1000 MHz is recommended only where the proposed station is in the vicinity of a monitoring station designated as a satellite monitoring facility in § 0.121(c) of the Commission's Rules and also meets the criteria outlined in paragraphs (d)(2) and (3) of this section.

(5) The Commission will not screen applications to determine whether advance consultation has taken place. However, applicants are advised that such consultation can avoid objections from the Federal Communications Commission or modification of any authorization which will cause harmful interference.

(e) In the band 420 to 450 MHz, applicants should not expect to be accommodated if their area of service is within 160 kilometers (100 miles) of the following locations:

(1) 45°45″ N., 70°32′ W,
(2) 64°17′ N., 149°10′ W,
(3) 48°43′ N., 97°54′ W;

within 200 kilometers (124 miles) of the following locations:

(1) 32°38′ N., 83°35′ W,
(2) 31°25′ N., 100°24′ W;

within 240 kilometers (150 miles) of the following location:

(1) 39°08′ N., 121°26′ W;

within 320 kilometers (200 miles) of the following locations:

(1) 28°21′ N., 80°43′ W,
(2) 30°30′ N., 86°30′ W,
(3) 43°09′ N., 119°11′ W;

or in the following locations:

(1) The state of Arizona,

(2) The state of Florida,

(3) Portions of California and Nevada south of 37°10′ N,

(4) And portions of Texas and New Mexico bounded by 31°45′ N., 34°30′ N., 104°00′ W. and 107°30′ W.

(Secs. 4, 303, 307, 48 Stat., as amended, 1066, 1082, 1083; 47 U.S.C. 154, 303, 307)

[43 FR 54791, Nov. 22, 1978, as amended at 44 FR 77167, Dec. 31, 1979; 47 FR 34420, Aug. 9, 1982; 49 FR 32770, Aug. 16, 1984; 50 FR 39003, Sept. 25, 1985; 54 FR 38680, Sept. 20, 1989; 54 FR 39740, Sept. 28, 1989]

§ 90.179 Shared use of radio stations.

Licensees of radio stations authorized under this rule part may share the use of their facilities. A station is shared when persons not licensed for the station control the station for their own purposes pursuant to the licensee's authorization. Shared use of a radio station may be either on a non-profit cost shared basis or on a for-profit private carrier basis. Shared use of an authorized station is subject to the following conditions and limitations:

(a) Persons may share a radio station only on frequencies for which they would be eligible for a separate authorization.

(b) The licensee of the shared radio station is responsible for assuring that the authorized facility is used only by persons and only for purposes consistent with the requirements of this rule part.

(c) Participants in the sharing arrangement may obtain a license for their own mobile units (including control points and/or control stations for control of the shared facility), or they may use mobile stations and control stations or control points authorized to the licensee.

(d) If the licensee shares the land station on a non-profit, cost shared basis to the licensee, this shared use must be pursuant to a written agreement between the licensee and each participant which sets out (1) the method of operation, (2) the components of the system which are covered by the sharing arrangements, (3) the method by which costs are to be apportioned, and (4) acknowledgement that all shared transmitter use must be subject to the licensee's control. These agreements must be kept as part of the station records.

(e) Applicants for stations governed under this section shall submit with their application the names and addresses, telephone numbers, nature of business or activity establishing eligiblity, and contact person for all systems users or members, together with the number of mobiles and control stations each user will initially put into operation. Eight months after grant, annually thereafter, and also whenever the system's total mobile and control station count decreases by 20 percent from the licensee's current authorization, the licensee shall submit to the applicable coordinator an updated list containing the above information, including the number of mobiles and control stations each user or member employs.

(f) If the land station which is being shared is interconnected with the public switched telephone network, the provisions of § 90.477 *et seq.* apply.

(g) Above 800 MHz, shared use on a for-profit private carrier basis is permitted only by SMR and Private Carrier Paging licensees. See Subparts P and S of this part.

[48 FR 26620, June 9, 1983, as amended at 51 FR 36014, Oct. 8, 1986; 53 FR 12156, Apr. 13, 1988; 54 FR 4030, Jan. 27, 1989; 54 FR 38681, Sept. 20, 1989]

§ 90.185 Multiple licensing of radio transmitting equipment in the mobile radio service.

Two or more persons eligible for licensing under this rule part may be licensed for the same land station under the following terms and conditions.

(a) Each licensee complies with the general operating requirements set out in § 90.403 of the rules.

(b) Each licensee is eligible for the frequency(ies) on which the land station operates.

(c) If the multiple licensed base station is interconnected with the public switched telephone network, the provisions of § 90.477 *et seq.* apply.

[48 FR 26621, June 9, 1983]

Subpart I—General Technical Standards

§ 90.201 Scope.

This subpart sets forth the general technical requirements for use of frequencies and equipment in the radio services governed by this part. Such requirements include standards for acceptability of equipment, frequency tolerance, modulation, emissions, power, and bandwidths. Special additional technical standards applicable to certain frequency bands and certain specialized uses are set forth in subparts J, K, and N.

[43 FR 54791, Nov. 22, 1978, as a
54 FR 4030, Jan. 27, 1989]

§ 90.203 Type acceptance requir

(a) Except as specified in p
(b) of this section, each tr
utilized for operation under
and each transmitter market
forth in § 2.803 (of part 2) mu
type which is included in the
sion's current Radio Equipme
type accepted for use under
or, be of a type which has b
accepted by the Commission
under this part in accordance
procedures in paragraph (a)(
section.

(1) The Commission pe
publishes a list of equipment
"Radio Equipment List, E
Acceptable for Licensing." C
this list are available for pub
ence at the Commission's o
Washington, D.C., and at ea
field offices. This list includes
cepted and, also, until such t
may be removed by Co
action, other equipment w
peared in this list on May 16,

(2) Any manufacturer of ra
mitting equipment (includin
boosters) to be used in these
may request type acceptance
equipment following the pr
set forth in subpart J of part
chapter. Type acceptance for
vidual transmitter or signal
also may be requested by an
for a station authorization b
ing the procedure set forth in
this chapter. Such equipmen
proved or accepted will not
be included in the Com
"Radio Equipment List" but w
dividually enumerated on the
authorization.

(b) Type acceptance is not
for the following:

(1) Transmitters used in
mental operations in accorda
subpart Q.

(2) Transmitters used for po
and interzone stations authori
January 1, 1965.

(3) Transmitting equipment
the band 1427-1435 MHz.

(4) Transmitters used in r
tion stations in accordance w
part F authorized prior to Ja

1974, for public safety and land transportation applications (old parts 89 and 93).

(5) Transmitters used in radiolocation stations in accordance with subpart F authorized for industrial applications (old part 91) prior to January 1, 1978.

(6) Until March 1, 1995 transmitters used in narrowband stations authorized prior to May 6, 1985 if they continue to be used at those stations.

(c) Radiolocation transmitters for use in public safety and land transportation applications marketed prior to January 1, 1974, must meet the applicable technical standards in this part, pursuant to § 2.805 of this chapter.

(d) Radiolocation transmitters for use in public safety and land transportation applications marketed after January 1, 1974, must comply with the requirements of paragraph (a) of this section.

(e) Except as provided in paragraph (g) of this section, transmitters designed to operate above 25 MHz shall not be type accepted for use under this part if the operator can program and transmit on frequencies, other than those programmed by the manufacturer, service or maintenance personnel, using the equipment's external operation controls.

(f) Except as provided in paragraph (g) of this section, transmitters designed to operate above 25 MHz that have been type accepted prior to January 15, 1988, and that permit the operator, by using external controls, to program the transmitter's operating frequencies, shall not be manufactured in, or imported into the United States after March 15, 1988. Marketing of these transmitters shall not be permitted after March 15, 1989.

(g) Transmitters having frequency programming capability and that are designed to operate above 25 MHz are exempt from paragraphs (e) and (f) of this section if the design of such transmitters:

(1) Is such that transmitters with external controls normally available to the operator must be internally modified to place the equipment in the programmable mode. Further, while in the programmable mode, the equipment shall not be capable of transmitting. The procedures for making the modification and altering the frequency program shall not be made available with the operating information normally supplied to the end user of the equipment; or

(2) Requires the tramsitter to be programmed for frequencies through controls normally inaccessible to the operator; or

(3) Requires equipment to be programmed for frequencies through use of external devices or specifically programmed modules made available only to service/maintenance personnel; or

(4) Requires equipment to be programmed through cloning (copying a program directly from another transmitter) using devices and procedures made available only to service/maintenance personnel.

(h) The requirements of paragraphs (e), (f), and (g) of this section shall not apply if:

(1) The equipment has been designed and manufactured specifically for aircraft use; and

(2) The part 90 type acceptance limits the use of the equipment to operations only under § 90.423.

(i) Equipment type accepted after February 16, 1988 and marketed for public safety operation in the 821–824/866–869 MHz bands must have the capability to be programmed for operation on the mutual aid channels as designated in § 90.617(a) of the Rules.

[43 FR 54791, Nov. 22, 1978; 44 FR 32219, June 5, 1979, as amended at 50 FR 13606, Apr. 5, 1985; 52 FR 47570, Dec. 15, 1987; 53 FR 1024, Jan. 15, 1988; 54 FR 38681, Sept. 20, 1989]

§ 90.205 Power.

(a) Applications for authorizations must specify no more power than the actual power necessary for satisfactory operation. In cases of harmful interference, the Commission may order a change in power or antenna height or both.

(b) Except where otherwise specifically provided, the maximum power that will be authorized is as follows:

Frequency range (megahertz)	Maximum output power	Maximum effective radiated power (watts)
1.3 to 3	[1][9] 1,500	
3 to 25	[1][2][9] 750	
25 to 100	[11] 300	
100 to 216	[3] 350	
216 to 220	(3 4)	(4)
220 to 470	[3][5] 350	
470 to 512		1,000
806 to 824	(6)	(6)
851 to 869	(7)	(6)
896 to 901	(6)	(6)
929 to 930	(7)	(10)
935 to 940	(7)	(6)
1427 to 1435	(3)	
2450 to 2500	5	
2500 to 10,550	(4)	(4)
10,550 to 10,680	[8] 3	
Above 10,680	(4)	(4)

[1] For single sideband operations (J3E emission) below 10 MHz, the authorized power shall be stated in terms of peak envelope power, which is the average power supplied to the antenna transmission line by a transmitter during 1 radio frequency cycle at the highest crest of the modulation envelope taken under conditions of normal operation. The maximum peak envelope power permitted is 1kW.

[2] In the frequency band 3 to 6 MHz, stations in the industrial services and the radiolocation radio service may be authorized up to 1500 W.

[3] Except as noted in footnote 5 the maximum output power in the Motor Carrier, Taxicab, Railroad, and Automobile Emergency Radio Services is 75 W.

[4] To be specified in the authorization.

[5] In the frequency band 450 to 470 MHz, stations in the land transportation radio services are limited to 75 W, however, they may be authorized up to 350 W for developmental operations in accordance with subpart Q.

[6] Specified in subpart S.

[7] The output power of a transmitter on any authorized frequency in this band shall not exceed 2000 W.

[8] The frequencies in the band 10,550—10,680 MHz are available for Digital Termination Systems and for associated internodal links in the Point-to-Point Microwave Radio Service. For Digital Termination Systems, the maximum transmitter output power is 0.5 W and the effective isotropic radiated power is limited to +40 dBW. *See* §§ 21.506 and 21.507. No new licenses will be issued under this subpart but current licenses will be renewed.

[9] For disaster communications and long distance circuit operations as provided for in §§ 90.264 and 90.266, peak envelope power is limited to 1 kW.

[10] As specified in § 90.494(f).

[11] Stations with suppressed carrier emissions may be authorized up to 350 W peak envelope power.

(c) The output power shall not exceed by more than 20 percent either the output power shown in the Radio Equipment List (available in accordance with § 90.203(a)(1) for transmitters included in this list or when not so listed, the manufacturer's rated output power for the particular transmitter specifically listed on the authorization.

(Secs. 4, 303, 307, 48 Stat., as amended, 1066, 1082, 1083; 47 U.S.C. 154, 303, 307)

[43 FR 54791, Nov. 22, 1978; 44 FR 32219, June 5, 1979, as amended at 46 FR 23454, Apr. 27, 1981; 47 FR 39512, Sept. 8, 1982; 47 FR 41044, Sept. 16, 1982; 48 FR 32997, July 20, 1983; 49 FR 48710, Dec. 14, 1984; 5 13606, Apr. 5, 1985; 51 FR 37400, Oct. 1986; 53 FR 1024, Jan. 15, 1988; 54 FR Sept. 20, 1989]

§ 90.207 Types of emissions.

Normally operations authorized the services governed by this part intended to provide voice communic tions between stations. Accordin except as otherwise provided for in t following paragraphs, stations in the services will be authorized to use o A3E, F3E, or G3E emission.

(a) Authorizations to use A3E, F or G3E emission also include the u of emissions for tone signals or sign ing devices whose sole functions are establish and to maintain communi tions, to provide automatic stati identification, and for operations the Public Safety and Special Em gency Radio Services, to activate eme gency warning devices used solely f the purpose of advising the gener public or emergency personnel of impending emergency situation.

(b) The use of F3E or G3E emissi in these services will be authoriz only on frequencies above 25 MHz.

(c) Except for Travelers' Inform tion stations in the Local Governme Radio Service authorized in accor ance with § 90.242, only J3E emissio will be authorized for telephony sy tems on frequencies below 25 MHz.

(d) For non-voice paging operatio only A1A, A1D, A2B, A2D, F1B, F1D F2B, F2D, G1B, G1D, G2B, or G emissions will be authorized.

(e) For radioteleprinter operatio that may be authorized in accordan with § 90.237, only F1B, F2B, G1B o G2B emissions will be authorize abo 25 MHz, and A1B or A2B emissio below 25 MHz.

(f) For radiofacsimile operatio that may be authorized in accordan with § 90.237, only F3C or G3C em sions will be authorized above 25 MH and A3C emissions below 25 MHz.

(g) For AVM systems that may b authorized in accordance wit § 90.239, only F1D, F2D, F3E, G3E, o P0N emissions will be authorized. F pulsed radars, the letters "K, L, M, V, W, and X" may be used in place o the letter "P".

) For telemetry operations, when cifically authorized under this part, AlD, A2D, F1D, or F2D emissions be authorized.

) For call box operations that may authorized in accordance with .241, only A1A, A1D, A2B, A2D, , F1D, F2B, F2D, G1B, G1D, G2B, , F3E or G3E emissions will be aurized.

) For radiolocation operations as be authorized in accordance with part F, unless otherwise provided any type of emission may be aurized upon a satisfactory showing eed.

) For stations in the Fire, Police Power Radio Services utilizing dig- voice modulation, in either the mbled or unscrambled mode, F1E G1E emission will be authorized. horization to use F3Y emission is strued to include the use of F1D, , G1D, or G2D emission subject to provisions of § 90.233.

) For narrowband operations in a kHz maximum authorized band- , any modulation type may be which complies with the emission tations of § 90.209.

FR 48711, Dec. 14, 1984, as amended at R 13606, Apr. 5, 1985; 50 FR 25240, June 985; 52 FR 29856, Aug. 12, 1987; 54 FR 1, Sept. 20, 1989]

209 Bandwidth limitations.

) Each authorization issued to a ion licensed under this part will an emission designator repreing the class of emission author- . The designator shall be prefixed he specified necessary bandwidth. figure does not necessarily indi- the bandwidth occupied by the sion at any instant. In those cases re part 2 of this chapter does not ide a formula for the computation ecessary bandwidth, the occupied dwidth as defined in part 2 may be in lieu of the necessary bandh. The maximum authorized dwidth contains those frequencies which 99 percent of the radiated er appears, extended to include discrete frequency upon which power is at least 0.25 percent of total radiated power.

) The maximum authorized bandh of emission corresponding to the type of emission specified in § 90.207 of this part and the maximum authorized frequency deviation in the case of frequency or phase modulated emission shall be as follows:

(1) For A1A or A1B emissions, the maximum authorized bandwidth shall be 0.25 kHz.

(2) Except as noted in paragraph (3) of this section, the maximum authorized bandwidth for type A3E emission shall be 3 kHz.

(3) For type J3E operations below 10 MHz, the bandwidth occupied by the emission shall not exceed 3000 Hz for equipment manufactured after November 1, 1983, and 3500 Hz for equipment manufactured before November 1, 1983. The assigned frequency will be specified in the authorization. The authorized carrier frequency shall be 1400 Hz lower in frequency than the assigned frequency. Only upper sideband emission shall be used. In the case of regularly available double sideband radiotelephone channels, an assigned frequency for J3E emissions is available either 1600 Hz below or 1400 Hz above the double sideband radiotelephone assigned frequency. The 3000 Hz occupied bandwidth is applicable to all types of transmitters for J3E operation below 10 MHz that are first accepted after November 1, 1982.

(4) For all F3E or G3E emissions on frequencies below 947 MHz, except for the frequency bands 896 to 901 MHz and 935 to 940 MHz, maximum authorized bandwidth shall be 20 kHz. Except for frequencies in the 821-824 and 866-869 MHz bands, the maximum authorized frequency deviation shall be 5 kHz. For frequencies in the 821-824 and 866-869 MHz bands the maximum authorized freuqency deviation shall be 4 kHz. Stations authorized for operation on or before December 1, 1961, in the frequency band 73.0-74.6 MHz may continue to operate with a bandwidth of 40 kHz and a deviation of 15 kHz. For stations operating on frequencies above 947 MHz, except as provided in paragraph (b)(5) of this section, the maximum authorized bandwidth and frequency deviation will be specified in the station authorization.

(5) For all emissions on the frequency bands 896-901 MHz and 935-940

MHz, the maximum authorized bandwidth shall be 13.6 kHz. The maximum authorized frequency deviation for all frequency modulated emissions shall be 2.5 kHz.

(6) The maximum authorized bandwidth shall be 25 MHz in the frequency band 10,550-10,680 MHz and 50 MHz in the frequency bands above 16,000 MHz.

(7) The maximum authorized bandwidth for non-Government radiolocation stations using spread spectrum techniques is 15 MHz, in the frequency range 420-435 MHz. The minimum authorized bandwidth is 10 MHz and the power of the spread spectrum emission shall be evenly distributed over the band.

(8) For narrowband operations granted on 5 kHz channels, the maximum authorized bandwidth shall be 3.6 kHz.

(9) For all other types of emissions the maximum authorized bandwidth shall not be more than that normally authorized for voice operations.

(c) Except as noted in paragraphs (d), (f), (g), (h), or (i) of this section, the mean power of any emission shall be attenuated below the mean output power of the transmitter in accordance with the following schedule:

(1) For transmitters operating on bands other than 896-901 MHz or 935-940 MHz:

(i) On any frequency removed from the assigned frequency by more than 50 percent, but not more than 100 percent of the authorized bandwidth: at least 25 decibels;

(ii) On any frequency removed from the assigned frequency by more than 100 percent, but not more than 250 percent of the authorized bandwidth: at least 35 decibels;

(iii) On any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth: at least 43 plus 10 Log_{10} (mean output power in watts) decibels or 80 decibels, whichever is the lesser attenuation.

(2) For transmitters operating in the 896-901 or 935-940 MHz bands:

(i) On any frequency removed from the center of the authorized bandwidth by a displacement frequency equal to or greater than 6.8 kHz up 9.0 kHz: at least 25 decibels;

(ii) On any frequency removed fro the center of the authorized ban width by a displacement frequen equal to or greater than 9.0 kHz up 15 kHz: at least 35 decibels;

(iii) On any frequency removed fro the center of the authorized ban width by a displacement frequen equal to or greater than 15 kHz least 43 plus 10 Log_{10} (mean outpu power in watts) decibels or 70 decibe whichever is the lesser attenuation.

(d) For single sideband operatio (J3E) below 10 MHz, the carrier fr quency power shall be at least 40 d below the peak envelope power an the mean power of emissions shall b attenuated below the mean outpu power of the transmitter in accord ance with the following schedule:

(1) On any frequency removed fro the assigned frequency by more tha 50% and up to and including 150% o the authorized bandwidth: At least decibels;

(2) On any frequency removed fro the assigned frequency by more tha 150% up to and including 250% of th authorized bandwidth: At least decibels;

(3) On any frequency removed fro the assigned frequency by more tha 250% of the authorized bandwidth: A least 43 plus 10 Log_{10} (mean power i watts) decibels.

(e) When radiation in excess of tha specified in paragraphs (c) and (d) o this section results in harmful inte ference, the Commission may requir among other available remedies, ap propriate technical changes in equip ment to alleviate the interference.

(f) For those transmitters that ope ate in the frequency bands of 25.0 t 50.0 MHz, 72.0 to 73.0 MHz, 75.4 t 76.0 MHz or 150.8 to 174.0 MHz tha are not equipped with an audio low pass filter in accordance with the provisions of paragraph (d)(1) of § 90.211 the power of any emission shall be attenuated below the unmodulated carrier power (P) in accordance with the following schedule:

(1) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f in kHz) of more than 5 kHz up to and

luding 10 kHz: At least 83 Log$_{10}$ (f_d/
lecibels;

t) On any frequency removed from
center of the authorized band-
th by a displacement frequency (f_d
kHz) of more than 10 kHz up to and
luding 250 percent of the author-
l bandwidth: At least 29 Log$_{10}$ (f_d^2/
decibels or 50 decibels, whichever
he lesser attentuation;

3) On any frequency removed from
center of the authorized band-
th by more than 250 percent of the
horized bandwidth: At least 43 plus
Log$_{10}$ (output power in watts) deci-
s or 80 decibels, whichever is the
er attenuation.

OTE: The measurements of emission
er can be expressed in peak or average
es provided they are expressed in the
e parameters as the unmodulated trans-
er carrier power.

) For transmitters that operate in
frequency bands 450-512 MHz,
-821 MHz, 851-866 MHz and 929-
MHz and are not equipped with an
io low-pass filter in accordance
n the provisions of § 90.211(d)(1),
power of any emission shall be at-
uated below the unmodulated car-
power (P) in accordance with the
owing schedule:

) On any frequency removed from
center of the authorized band-
th by a displacement frequency (f_d
Hz) of more than 5 kHz up to and
uding 10 kHz: At least 83 Log$_{10}$ (f_d/
ecibels;

) On any frequency removed from
center of the authorized band-
th by a displacement frequency (f_d
Hz) of more than 10 kHz up to and
uding 250 percent of the author-
bandwidth: At least 116 Log$_{10}$ (f_d/
decibels or 50 plus 10 Log$_{10}$ (P)
bels or 70 decibels, whichever is
lesser attenuation;

) On any frequency removed from
center of the authorized band-
h by more than 250 percent of the
horized bandwidth: At least 43 plus
og$_{10}$ (output power in watts) deci-
or 80 decibels, whichever is the
er attenuation.

TE: The measurements of emission
r can be expressed in peak or average
s provided they are expressed in the
parameters as the unmodulated trans-
er carrier power.

(h) For transmitters that operate in the frequency bands 896-901 MHz and 935-940 MHz, and are not equipped with an audio low-pass filter in accordance with the provisions of § 90.211(d)(1), the power of any emission shall be attenuated below the unmodulated carrier power of the transmitter (P) in accordance with the following schedule:

(1) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 2.5 kHz up to and including 6.25 kHz: At least 53 Log$_{10}$ (f_d/2.5) decibels;

(2) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 6.25 kHz up to and including 9.5 kHz: At least 103 Log$_{10}$ (f_d/3.9) decibels;

(3) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 9.5 kHz up to and including 15 kHz: At least 157 Log$_{10}$ (f_d/5.3) decibels;

(4) On any frequency removed from the center of the authorized bandwidth by a displacement frequency greater than 15 kHz. At least 50 plus 10 Log$_{10}$ (P) decibels or 70 decibels, whichever is the lesser attenuation.

(i) For transmitters that operate in the frequency bands 821-824 and 866-869 MHz that are not equipped with an audio low-pass filter in accordance with the provisions of § 90.211(d)(1), the power of any emission shall be attenuated below the unmodulated carrier power (P) in accorance with the following schedule:

(1) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of 4 kHz or less: 0 dB.

(2) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 4 kHz up to and including 8.5 kHz: At least 107 log$_{10}$(f_d/4).

(3) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 8.5 kHz up to and including 15 kHz: At least 40.5 log$_{10}$(f_d/1.16).

(4) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 15 kHz up to and including 25 kHz: At least $116 \log_{10}(f_d/6.1)$.

(5) On any frequency removed from the center of the authorized bandwidth by more than 25 kHz: At least $43 + \log_{10}$ (output power in watts), or 80 dB, whichever is lesser attenuation.

(j) For transmitters that operate on channels spaced 5 kHz apart (See § 90.271) the power of any emission shall be attenuated below the peak envelope power (P) in accordance with the following schedule:

(1) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kilohertz) of more than 2 kHz up to and including 5 kHz: At least $29 \text{Log}_{10}((25/11)\, f_d^2)$ decibels or 50 decibels, whichever is the lesser attenuation;

(2) On any frequency removed from the center of the authorized bandwidth by more than 5 kHz: At least 43 plus 10Log_{10} (P) decibels or 80 decibels, whichever is the lesser attenuation.

(k) All out of band emissions, including spurious emissions from switching, that are produced by frequency hopping systems, shall be kept below the limits specified in this section of the rules for similar systems which are modulated about a fixed frequency and do not frequency hop.

[43 FR 54791, Nov. 22, 1978; 44 FR 32219, June 5, 1979, as amended at 45 FR 84803, Dec. 23, 1980; 46 FR 52373, Oct. 27, 1981; 47 FR 34420, Aug. 9, 1982; 47 FR 39510, Sept. 8, 1982; 49 FR 48711, Dec. 14, 1984; 50 FR 13606, Apr. 5, 1985; 50 FR 25240, June 18, 1985; 51 FR 37400, 37401, Oct. 22, 1986; 53 FR 1024, Jan. 15, 1988; 54 FR 38681, Sept. 20, 1989]

§ 90.211 Modulation requirements.

(a) For those transmitters subject to the provisions of paragraph (d) of this section, the maximum audio frequency required for satisfactory radiotelephony intelligibility in the radio services governed by this part is considered to be 3000 Hertz (2800 Hz for single sideband operations below 25 MHz). For all others, the overall frequency response of the audio and modulating circuits may correspond approximately with that required for satisfactory intelligibility.

(b) When amplitude modulation is used for radiotelephony, the modulation percentage shall be sufficient to provide efficient communication and normally should be maintained above 70 percent on peaks, but shall not exceed 100 percent on negative peaks.

(c) Each transmitter shall be equipped with a device which automatically prevents modulation in excess of that specified in this subpart which may be caused by greater than normal audio level. This requirement shall not be applicable to transmitters authorized to operate as mobile stations with a maximum output power of 2 watts or less.

(d) Each transmitter shall meet the requirements provided in paragraph (d) (1) or (2) of this section. The requirements of this paragraph do not apply to mobile stations that are authorized to operate with a maximum power output of 2 watts or less or to any radio-telecommunication system operating wholly within the limits of one or more of the territories or possessions of the United States, or Alaska, or Hawaii, except those systems operating in the frequency ranges 806 to 824 MHz, 851 to 869 MHz, 896 to 901 MHz, and 935 to 940 MHz.

(1) Transmitters subject to the emission limitations of paragraph (c) of § 90.209 shall be equipped with an audio low-pass filter. The audio filter shall be installed between the modulation limiter and modulated stage and shall meet the following requirements:

(i) Transmitters that operate in the frequency bands of 25.0 to 50.0 MHz, 72.0 to 73.0 MHz, 75.4 to 76.0 MHz, or 150.8 to 174.0 MHz the attenuation of the audio filter between the frequencies of 3 kHz and 15 kHz shall be greater than the attenuation at 1 kHz by at least: $40 \text{Log}_{10} (f/3)$ decibels where "f" is the frequency in kHz. At audio frequencies above 15 kHz, the attenuation shall be at least 28 decibels greater than the attenuation at 1 kHz.

(ii) For transmitters that operate in the frequency band of 450 to 470 MHz and that are authorized on or after November 1, 1967, and transmitters that operate in the frequency bands of 470 to 512 MHz, 806 to 824 MHz, 851 to 869 MHz, 929 to 930 MHz, and Traveler's Information Stations on 530 and 1610 kHz, the attenuation of the low-pass filter between the frequencies of 3 kHz and 20 kHz shall be greater than the attenuation at 1 kHz by at least: 60 Log_{10} (f/3) decibels where "f" is the frequency in kHz. At frequencies above 20 kHz, the attenuation shall be 50 decibels greater than the attenuation at 1 kHz.

(iii) For transmitters that operate in the frequency bands 896-901 MHz or 935-940 MHz, the attenuation of the low-pass filter between the frequencies of 3 kHz and 20 kHz shall be greater that the attenuation at 1 kHz by at least 100 log f/3 decibels where "f" is the frequency in kHz.

(2) Transmitters subject to the emission limitations of paragraphs (f), (g), (h) or (j) of § 90.209 shall be exempt from the audio low-pass filter requirements of this section, provided that transmitters used for digital emissions must be type accepted with the digital modulating signal or signals specified by the manufacturer. The type acceptance application shall contain such information as may be necessary to demonstrate that the transmitter complies with the emission limitations specified in paragraphs (f), (g), (h) or (j) of § 90.209.

[43 FR 54791, Nov. 22, 1978, as amended at 45 FR 84803, Dec. 23, 1980; 47 FR 39510, Sept. 8, 1982; 50 FR 13606, Apr. 5, 1985; 51 FR 37401, Oct. 22, 1986; 53 FR 1025, Jan. 15, 1988]

§ 90.212 Provisions relating to the use of scrambling devices and digital voice modulation.

(a) Analog scrambling techniques may be employed at any station authorized the use of A3E, F3E, or G3E emission, subject to the provision of paragraph (d) of this section.

(b) The use of digital scrambling techniques or digital voice modulation requires the specific authorization of F1E or G1E emission, and these emissions will only be authorized subject to the provisions of paragraph (d) of this section.

(c) The transmission of any non-voice information or data under the authorization of F1E or G1E emission is prohibited. However, stations authorized the use of F1E or G1E emission may also be authorized F1D, F2D, G1D or G2D emission for non-voice communication purposes, pursuant to paragraph (k) of § 90.207.

(d) Station identification shall be transmitted in the unscrambled analog mode (clear voice) or Morse code in accordance with the provisions of § 90.425. All digital encoding and digital modulation shall be disabled during station identification.

[43 FR 54791, Nov. 22, 1978, as amended at 47 FR 15340, Apr. 9, 1982; 49 FR 48711, Dec. 14, 1984]

§ 90.213 Frequency tolerance.

(a) A licensee in the services governed by this part shall maintain the carrier frequency of each authorized transmitter within the following percentage of the assigned frequency:

FREQUENCY TOLERANCE

Frequency range	Fixed and base stations		Mobile stations	
	Over 200 W output power	200 W or less output power	Over 2W output power	2W or less output power
Below 25	[1,2,3,4].005	.01	.01	.02
25 to 50	.002	.002	.002	.005
50 to 450	[5,6,17].0005	[5,6,17].0005	[6,17].0005	[7,17].005
450 to 470	[8,9,10].00025	[8,9,10].00025	.0005	.0005
470 to 512	[8].00025	[8].00025	.0005	.0005
806 to 821	[11,18].00015	[11,18].00015	[18].00025	[18].00025
821 to 824	[11].0001	[11].0001	.00015	.00015
851 to 866	[18].00015	[18].00015	[18].00025	[18].00025
866 to 869	.0001	.0001	.00015	.00015
896 to 901	(11)(16).00001	(11)(16).00001	(16).00015	(16).00015
929 to 930	.00015	.00015	([15])	([15])
935 to 940	(16).00001	(16).00001	(16).00015	(16).00015

FREQUENCY TOLERANCE—Continued

Frequency range	Fixed and base stations		Mobile sta
	Over 200 W output power	200 W or less output power	Over 2W output power
1427 to 1435	[12].03	[12].03	.03
Above 2450	([13] [14])	([13] [14])	([13] [14])

[1] Fixed and base stations in the Public Safety and Special Emergency Radio Services may operate with
tolerance of 0.01 pct.

[2] Radiolocation stations operating in the 70-90 kHz or 110-130 kHz bands may operate with a frequency toler
pct.

[3] For single sideband operations below 10 MHz, the carrier frequency must be maintained within 50 Hz of the
carrier frequency.

[4] For disaster communications and long distance circuit operations according to §§ 90.264 and 90.266,
exceeding 200 W peak envelope power shall maintain the carrier frequency to within 20 Hz of the authorized carri

[5] Stations authorized for operation on or before December 1, 1961, in the frequency band 73-74.6 MHz may op
frequency tolerance of 0.005 pct.

[6] Radio call box stations in the Local Government Radio Service in the 72-76 MHz band may operate with
tolerance of 0.005 pct.

[7] Stations operating in the 154.45 to 154.49 MHz or the 173.2 to 173.4 MHz bands must operate with a frequen
of 0.0005 pct.

[8] Operational fixed stations controlling mobile relays, through use of the associated mobile frequency, may op
frequency tolerance of 0.0005 pct.

[9] Base stations operating on the frequencies 452.925, 452.950, 457.925, and 457.950 MHz used for remote contr
in railroad yard and terminal areas, may operate with a frequency tolerance of 0.0005 pct.

[10] Central control and radio call box stations may operate with a frequency tolerance of 0.001 pct.

[11] Control stations may operate with the frequency tolerance specified for associated mobile stations.

[12] Fixed stations with an output power above 120W and necessary bandwidth less than 3 kHz must ope
frequency tolerance of 0.01 pct. Fixed stations with an output power less than 120W and using time-division mu
operate with a frequency tolerance of 0.05 pct.

[13] Radiolocation equipment using pulse modulation shall meet the following frequency tolerance: the frequen
maximum emission occurs shall be within the authorized frequency band and shall not be closer than 1.5/T MHz t
and lower limits of the authorized frequency band, where T is the pulse duration in microseconds.

[14] To be specified in the station authorization.

[15] Mobile units will not be authorized in this band.

[16] This limitation does not apply where specifically provided for in other sections of this part.

[17] In the 150–170 MHz band, stations operating on 5 kHz channels shall maintain the carrier frequency to with
cent.

(b) For the purpose of determining the frequency tolerance applicable to a particular transmitter in accordance with the foregoing provisions of this section, the power of a transmitter shall be the maximum rated output power as specified by the manufacturer.

[43 FR 54791, Nov. 22, 1978; 44 FR 32219, June 5, 1979; 44 FR 57099, Oct. 4, 1979, as amended at 46 FR 52373, Oct. 27, 1981; 47 FR 11022, Mar. 15, 1982; 47 FR 39511, Sept. 8, 1982; 47 FR 41045, Sept 16, 1982; 47 FR 51883, Nov. 18, 1982; 48 FR 32997, July 20, 1983; 50 FR 13606, Apr. 5, 1985; 50 FR 38129, Sept. 20, 1985; 51 FR 37401, Oct. 22, 1986; 53 FR 1025, Jan. 15, 1988]

§ 90.215 Transmitter measurements.

(a) The licensee of each station shall employ a suitable procedure to determine that the carrier frequency of each transmitter authorized to operate with an output power in excess of two watts is maintained within the tolerence prescribed in § 90.213. This determination shall be made, and the results entered in the station records in accordance with the following:

(1) When the transmitter is i
installed;

(2) When any change is made
transmitter which may affect t
rier frequency or its stability.

(b) The licensee of each statio
employ a suitable procedure to
mine that each transmitter aut
to operate with an output po
excess of two watts does not
the maximum figure specified
current station authorization.
thorizations stating only the
power to the final radiofre
stage, the maximum perm
output power is 75 percent f
quencies below 25 MHz and 60
of the input power for frequ
above 25 MHz. If a non-DC final
frequency stage is utilized, th
output power shall not exceed
cent of the input power. This de
nation shall be made, and the
thereof entered into the
records, in accordance with the
ing:

(1) When the transmitter is in
installed;

(2) When any change is made in the transmitter which may increase the transmitter power input.

(c) The licensee of each station shall employ a suitable procedure to determine that the modulation of each transmitter, which is authorized to operate with an output power in excess of two watts, does not exceed the limits specified in this part. This determination shall be made and the following results entered in the station records, in accordance with the following:

(1) When the transmitter is initially installed;

(2) When any change is made in the transmitter which may affect the modulation characteristics.

(d) The determinations required by paragraphs (a), (b), and (c) of this section may, at the opinion of the licensee, be made by a qualified engineering measurement service, in which case the required record entries shall show the name and address of the engineering measurement service as well as the name of the person making the measurements.

(e) In the case of mobile transmitters, the determinations required by paragraphs (a) and (c) of this section may be made at a test or service bench: *Provided*, That the measurements are made under load conditions equivalent to actual operating conditions; and provided further, that after installation in the mobile unit the transmitter is given a routine check to determine that it is capable of being received satisfactorly by an appropriate receiver.

§ 90.217 Exemption from technical standards.

Transmitters used at stations licensed in the Business Radio Service which have an output power not exceeding 120 milliwatts are exempt from the technical requirements set out in this subpart: *Provided*, however, that the sum of the bandwidth occupied by the emitted signal plus the bandwidth required for frequency tolerance shall be so adjusted that any emission appearing on a frequency 40 kHz or more removed from the assigned frequency is attenuated at least 30 dB below the unmodulated carrier. Only type accepted transmitters may be used. Such transmitters may operate in the continuous carrier transmit mode.

[44 FR 32219, June 5, 1979]

Subpart J—Non-Voice and Other Specialized Operations

§ 90.231 Scope.

This subpart sets forth requirements and standards for licensing and operation of non-voice and other specialized radio uses (other than radiolocation). Such uses include secondary signaling, telemetry, radioteleprinter, radiofacsimile, automatic vehicle monitoring (AVM), radio call box, relay, vehicular repeater, and control station operations.

§ 90.233 Base/mobile non-voice operations.

The use of A1D, A2D, F1D, F2D, G1D, or G2D emission may be authorized to base/mobile operations in accordance with the following limitations and requirements.

(a) Licensees employing non-voice communications are not relieved of their responsibility to cooperate in the shared use of land mobile radio channels. See also §§ 90.403 and 90.173(a) and (b).

(b) Authorization for non-voice emission may be granted only on frequencies subject to the coordination requirements set forth in § 90.175. Non-voice operations on frequencies not subject to these requirements are permitted only a secondary basis to voice communications.

(c) Provisions of this section do not apply to authorizations for paging, telemetry, radiolocation, AVM radioteleprinter, radiofacsimile, or radio call box operations, which are governed by other sections of this part.

[48 FR 2794, Feb. 3, 1983, as amended at 49 FR 48711, Dec. 14, 1984]

§ 90.235 Secondary fixed signaling operations.

Fixed operations may, subject to the following conditions, be authorized on a secondary basis for voice, tone or impulse signaling on a licensee's mobile service frequency(ies) above 25 MHz within the area normally covered by the licensee's mobile system. Voice signaling will be permitted only in the Police Radio Service.

(a) The bandwidth shall not exceed that authorized to the licensee for the primary operations on the frequency concerned.

(b) The output power shall not exceed 30 watts at the remote site.

(c) A1D, A2D, F1D, F2D, G1D and G2D emissions may be authorized. In the Police Radio Service, A3E, F1E, F2E, F3E, G1E, G2E, or G3E emissions may also be authorized.

(d) Except for those systems covered under paragraph (e) of this section, the maximum duration of any non-voice signaling transmission shall not exceed 2 seconds and shall not be repeated more than 3 times. Signaling transmissions may be staggered at any interval or may be continuous. In the Police Radio Service, the maximum duration of any voice signaling transmission shall not exceed 6 seconds and shall not be repeated more than 3 times.

(e) Until December 31, 1999, for systems in the Public Safety Radio Services authorized prior to June 20, 1975, and in the Power and Petroleum Radio Services authorized prior to June 1, 1976, the maximum duration of any signaling transmission shall not exceed 6 seconds and shall not be repeated more than 5 times. For Power Radio Service systems authorized between June 1, 1976 and (effective date of the rules), a signaling message duration shall not exceed 2 seconds and shall not be repeated more than 5 times. Such systems include existing facilities and additional facilities which may be authorized as a clear and direct expansion of existing facilities. After December 31, 1999, all signaling systems shall be required to comply with the two second message duration and three repetition requirements.

(f) Systems employing automatic interrogation shall be limited to non-voice techniques and shall not be activated for this purpose more than 10 seconds out of any 60 second period. This 10 second timeframe includes both transmit and response times.

(g) Automatic means shall be pro
ed to deactivate the transmitter in
event the r.f. carrier remains on f
period in excess of 3 minutes or i
transmission for the same signal
function is repeated consecuti
more than five times.

(h) Fixed stations authorized pu
ant to the provisions of this secti
are exempt from the requirements
§§ 90.137(b), 90.425, and 90.429.

(i) Base, mobile, or mobile relay s
tions may transmit secondary sign
ing transmissions to receivers at fi
locations subject to the conditions
forth in this section.

(j) Under the provisions of this s
tion, a mobile service frequency m
not be used exclusively for second
signaling.

(k) The use of secondary signali
will not be considered in whole or
part as a justification for authorizi
additional frequencies in a licensee
land mobile radio system.

[54 FR 28679, July 7, 1989]

§ 90.237 Interim provisions for operati of radioteleprinter and radiofacsimi devices.

These provisions authorize a
govern the use of radioteleprinter an
radiofacsimile devices for base static
use (other than on mobile-only o
paging-only frequencies) in the radi
services (except in the Radiolocatio
and Special Emergency Radio Ser-
ices) in this part.

(a) Information must be submitte
with an application to establish tha
the minimum separation between
proposed radioteleprinter or radiofac
simile base station and the nearest co
channel base station of another licens
ee operating a voice system is 120 km
(75 mi.) for a single frequency mode of
operation, or 56 km. (35 mi.) two fre
quency mode of operation. Where this
minimum mileage separation cannot
be achieved, either agreement to the
use of F1B, F2B, F3C, G1B, G2B or
G3C emission must be received from
all existing co-channel licensees using
voice emission within the applicable
mileage limits, or if agreement was not
received, the licensee of the radiotele-
printer or radiofacsimile system is re-
sponsible for eliminating any interfer-

ence with preexisting voice operations. New licenses of voice operations will be expected to share equally any frequency occupied by established radioteleprinter or radiofacsimile operations.

(b) The application must list the manufacturer and model number of the radioteleprinter or radiofacsimile system to be employed, or contain a detailed technical description of the system.

(c) Transmitters type-accepted under this part for use of G3E or F3E emission may also be used for F1B, F2B, F3C, G1B, G2B or G3C emission for radioteleprinter or radiofacsimile, provided the keying signal is passed through the low pass audio frequency filter required for G3E or F3E emission. The transmitter must be so adjusted and operated that the instantaneous frequency deviation does not exceed the maximum value allowed for G3E or F3E.

(d) Frequencies will not be assigned exclusively for F1B, F2B, F3C, G1B, G2B or G3C emission for radioteleprinter or radiofacsimile (except where specifically provided for in the frequency limitations).

(e) The requirements in this part applicable to the use of G3E or F3E emission are also applicable to the use of F1B, F2B, F3C, G1B, G2B or G3C emission for radioteleprinter and radiofacsimile transmissions.

(f) The station identification required by § 90.425 must be given by voice or Morse code.

(g) For single sideband operations in accordance with § 90.266, transmitters type-accepted under this part for use of J3E emissions may also be used for A2B and F2B emission for radioteleprinter transmissions. Transmitters type-accepted under this part for use of J3E emissions in accordance with §§ 90.63(d)(1), 90.65(c)(1), 90.73(d)(1) and 90.81(d)(13) may also be used for A1B, A2B, F1B, F2B, J2B, and A3C emissions to provide standby backup circuits for operational telecommunications circuits which have been disrupted, where so authorized in other sections of this part.

[43 FR 54791, Nov. 22, 1978, as amended at 49 FR 48712, Dec. 14, 1984; 51 FR 14998, Apr. 22, 1986]

§ 90.238 Telemetry operations.

The use of telemetry is authorized under this part on the following frequencies.

(a) 72–76 MHz (as available in specific radio service frequency listings in accordance with § 90.257 and subject to the rules governing the use of that band).

(b) 154.45625, 154.46375, 154.47125, 154.47875 MHz (as available in specific radio service frequency listings and subject to the rules governing use of those frequencies).

(c) 173.20375, 173.2100, 173.2375, 173.2625, 173.2875, 173.3125, 173.3375, 173.3625, 173.3900, 173.39625 MHz (as available in specific radio service frequency listings and subject to the rules governing the use of that band).

(d) 216–220 and 1427–1435 MHz (as available in specific radio service frequency listings and in accordance with § 90.259.

(e) Frequencies separated by 12.5 kHz from regularly assignable frequencies in the 450–470 MHz band, as specified at § 90.267, except that such offset channels between 460.650 and 460.875 MHz and between 465.650 and 465.875 MHz are available in the Business Radio Service exclusively for one-way, non-voice biomedical telemetry operation in hospitals, medical centers, or convalescent centers.

(f) [Reserved]

(g) 450–470 MHz band (as available for secondary fixed operations in accordance with § 90.261).

(h) 458–468 MHz band (as available in the Special Emergency Radio Service for bio-medical telemetry operations).

(i) Frequencies available for low power (2 watts or less) operations in the Business Radio Service.

[44 FR 17183, Mar. 21, 1979, as amended at 46 FR 45955, Sept. 16, 1981; 50 FR 39680, Sept. 30, 1985; 50 FR 40976, Oct. 8, 1985]

§ 90.239 Interim provisions for operation of automatic vehicle monitoring (AVM) systems.

(a) These provisions authorize, to persons eligible in the radio services of this part, the licensing of automatic vehicle monitoring (AVM) systems that utilize nonvoice radio techniques to determine the location of vehicles. Authority is also provided for the transmission of voice and/or nonvoice messages relating to vehicles being located.

(b) The use of F1D, F2D, F3E, G1D, G2D, G3E, or P0N emissions is authorized for operation of transmitters in AVM systems subject to paragraph (e)(2)(iii) of this section.

(c) Frequencies for AVM operations are assignable as follows: (1) Licensees for pulse-ranging AVM systems, requiring 8 MHz bandwidth may be authorized in the 904-912 MHz or 918-926 MHz band provided that:

(i) A licensee will not be assigned a second frequency band in the same geographic area until showing is made that the frequency band already assigned is being used to provide location data for not less than 5,000 vehicles.

(ii) Operations will not cause interference to government stations which operate in these bands and can tolerate interference from industrial, scientific, and medical (ISM) devices and from government stations which operate in these bands.

(2) AVM systems requiring bandwidths not exceeding 1 MHz may be authorized in the 903-904 or 926-927 MHz band on a developmental basis in accordance with subpart Q.

(3) Applicants requiring not more than 25 kHz bandwidth per frequency in the 25-50 MHz, 150-170 MHz, and 450-512 MHz bands may either utilize base-mobile frequencies presently assigned the applicant, or be assigned base-mobile frequencies available in the service in which eligibility has been established, provided that:

(i) For transmission between vehicles and base stations, each frequency in a single-frequency mode of operation will provide location data for approximately 200 vehicles, or both frequencies in a two-frequency mode of operation will provide location data for approximately 400 vehicles, except that for frequencies in the 450-512 MHz band that are assigned in pairs in accordance with the allocation plan for the band, the requirement is that location data be provided for approximately 200 vehicles for each frequency pair; and a showing is made that 50 percent of the vehicles will be in ope ation within the system by the end the second year of the initial lice term, and 70 percent will be in ope ation within the system by the end the initial license term; except that these vehicle loading standards w not be met, frequencies will be a signed only on a secondary noninte ference basis to any authorized radi telephony operation.

(ii) The minimum separation b tween a proposed AVM station and th nearest co-channel base station of a other licensee operating a voice syste is 75 miles (120 km) for a single fr quency mode of operation or 35 mile (56 km) for a two-frequency mode o operation. Where the minimum mile age separation cannot be achieve agreement to the use of F1D, F2 G1D, G2D or P0N emission must b received from all existing co-chann licensees using voice emissions withi the applicable mileage limits. If ther is interference with voice operatio and required agreement was not r ceived, or operation was authorized o a secondary noninterference basis, th licensee of the AVM system is respo sible for eliminating the interference.

(iii) Frequencies additional to a assigned under paragraph (i) of th paragraph (c)(3) will not be assigne to the same licensee in the same ge graphic area until each of such licen ee's frequencies for AVM operation shown to accommodate not less tha 90 percent of the frequency loading re quirements specified in paragraph (of this paragraph (c)(3).

(d) Each application to license a AVM system shall include the follow ing supplemental information:

(1) A detailed description of th manner in which the system will ope ate, including a map or diagram.

(2) For wide band frequency ope ation, the necessary or occupied band width of emission whichever is grea er.

(3) The data transmission characte istics as follows:

(i) The vehicle location update rate

(ii) Specific transmitter modulatio techniques used;

(iii) For codes and timing scheme: a table of bit sequences and their alph numeric or indicator equivalents, an a statement of bit rise time, bit transmission rates, bit duration, and interval between bits;

(iv) A statement of amplitude-versus-time of the interrogation and reply formats, and an example of a typical message transmission and any synchronizing pulses utilized.

(4) A plan to show implementation schedule during the initial license term.

(e) *Technical standards.* (1) AVM stations authorized for operation below 512 MHz must comply with the technical standards applicable to the frequency band prescribed in this chapter, including the requirement for type acceptance of equipment used.

(2) Pending final development of technical standards, utilization of non-type accepted transmitters by stations authorized for operation above 512 MHz will be permissible provided that:

(i) The output power of transmitters used in pulse ranging systems shall not exceed 1 kW PEP;

(ii) The output power of transmitters used in nonpulse ranging systems shall not exceed 300 watts;

(iii) Emissions will be authorized on a case-by-case basis dependent on the requirements of the specific technique utilized.

(3) Transmitters to be operated at signposts, or from vehicles to signposts for location signaling purposes may be employed with output power not to exceed 250 milliwatts, and their operation is secondary to regular co-channel operations on the frequency being utilized.

(4) Pending development of further specific technical standards for AVM systems, the Commission, on a case-by-case basis, may impose additional appropriate technical requirements to assure efficient and effective frequency utilization.

(f) AVM stations are exempted from the identification requirements of § 90.425; however, the Commission may impose automatic station identification requirements when determined to be necessary for monitoring and enforcement purposes.

[43 FR 54791, Nov. 22, 1978; 44 FR 57099, Oct. 4, 1979; 45 FR 43419, June 27, 1980, as amended at 49 FR 48712, Dec. 14, 1984]

§ 90.241 Radio call box operations.

(a) The frequencies in the 72-76 MHz band listed in § 90.257(a)(1) may be assigned in the Local Government Radio Service for operation of radio call boxes to be used by the public to request fire, police, ambulance, road service, and other emergency assistance, subject to the following conditions and limitations:

(1) Maximum transmitter power will be either 2.5 watts plate input to the final stage or 1 watt output.

(2) Antenna gain shall not exceed zero dBd (referred to a half-wave dipole) in any horizontal direction.

(3) Only vertical polarization of antennas shall be permitted.

(4) The antenna and its supporting structure must not exceed 20 feet (6.1 meters) in height above the ground.

(5) Only A1D, A2D, F1D, F2D, G1D, or G2D emission shall be authorized.

(6) The transmitter frequency tolerance shall be 0.005 percent.

(7) Except for test purposes, each transmission must be limited to a maximum of two seconds and shall not be automatically repeated more than two times at spaced intervals within the following 30 seconds. Thereafter, the authorized cycle may not be reactivated for one minute.

(8) All transmitters installed after December 10, 1970, shall be furnished with an automatic means to deactivate the transmitter in the event the carrier remains on for a period in excess of three minutes. The automatic cutoff system must be designed so the transmitter can be only manually reactivated.

(9) Frequency selection must be made with regard to reception of television stations on channels 4 (66-72 MHz) and 5 (76-82 MHz) and should maintain the greatest possible frequency separation from either or both of these channels, if they are assigned in the area.

(b) [Reserved]

(c) Frequencies in the 450-470 MHz band which are designated as available for assignment to central control stations and radio call box installations in § 90.17(b) or § 90.17(c)(11) may be assigned in the Local Government Radio

Service for highway call box systems subject to the following requirements:

(1) Call box transmitters shall be installed only on limited access highways and may communicate only with central control stations of the licensee.

(2) Maximum transmitter power for call boxes will be either 2.5 watts input to the final amplifier stage or one watt output. The central control station shall not exceed 25 watts effective radiated power (ERP).

(3) The height of a call box antenna may not exceed 6.1 meters (20 feet) above the ground, the natural formation, or the existing man-made structure (other than an antenna supporting structure) on which it is mounted. A central station transmitting antenna, together with its supporting structure shall not exceed 15 m. (50 ft.) above the ground surface.

(4) Only F1D, F2D, F3E, G1D, G2D, or G3E, emission may be authorized for nonvoice signaling, radiotelephony, and multiplexed voice and nonvoice use. The provisions in this part applicable to the use of F3E or G3E emission are also applicable to the use of F1D, F2D, G1D or G2D emission for call box transmitters.

(5) The station identification required by § 90.425 shall be by voice and may be transmitted for the system from the central control station. Means shall be provided at each central control station location to automatically indicate the call box unit identifier when a call box unit is activated.

(6) Call box installations must be so designed that their unit identifier is automatically transmitted when the handset is lifted.

(7) Each application for a call box system must include a description of the nonvoice transmitting equipment. This description shall specify the character structure, bit rate, modulating tone frequencies, identification codes, and the method of modulation (i.e., frequency shift, tone shift, or tone phase shift).

(8) Call box installations may be used secondarily for the transmission of information from roadside sensors. Central control station transmitters may be used secondarily to interrogate call box roadside sensors and for the transmission of signals to
roadside signs.

(9) Each call box transmit
be provided with a timer w
automatically deactivate the
ter after 2 minutes unless th
control station operator re
the timer cycle.

(10) The central control sta
include facilities that perm
control of any call box in th
(11) Call box transmitter f
tolerance shall be 0.001 percer
(12) Transmitters type
under this part for use of F3
emission may be used for F
G2B or G2D emission provi
the audio tones or digital dat
passed through the low pa
filter required to be provide
transmitter for F3E or G3E
The transmitter must be adju
operated so that the insta
frequency deviation does no
the maximum value allowed
or G3E emission.

(d) In addition to the fre
available pursuant to § 90.1
frequencies set forth in § 90.
may be used for central contr
and call box installations
where such frequencies are
for fixed system use subject t
quirements and limitations of
tion and subject to the prov
paragraphs (c)(1), (4), (5), (6),
(9), (10), and (12) of this sectio

(e) In accordance with subp
this part, the frequencies
pursuant to § 90.17(b) and (c
central control station and cal
stallations may be assigned f
opmental operation as part o
way safety communication
which is designed to provi
communications directly with
ists to and from their motor ve

[43 FR 54791, Nov. 22, 1978; 44
June 5, 1979; 49 FR 48712, Dec. 14
FR 39680, Sept. 30, 1985; 50 FR 4
8, 1985; 54 FR 38681, Sept. 20, 19
45891, Oct. 31, 1989]

§ 90.242 Travelers' information st

(a) 530 and 1610 kHz. The
cies 530 and 1610 kHz may be
in the Local Government Rad
ice for the operation of Trave

formation Stations subject to the following conditions and limitations:

(1) For Travelers' Information Station applications only, eligibility requirements as set forth in § 90.17(a) are extended to include park districts and authorities.

(2) Each application for a station or system shall be accompanied by:

(i) A statement certifying that the transmitting site of the Travelers Information Station will be located at least 15.0 km, (9.3 miles) measured orthogonally, outside the measured 0.5 mV/meter daytime contour of any AM broadcast station operating on a first adjacent channel (540 kHz or 1600 kHz). If the measured contour is not available, then the calculated 0.5 mV/m field strength contour shall be acceptable. These contours are available for inspection at the concerned AM broadcast station and FCC offices in Washington, D.C.

(ii) In consideration of possible cross-modulation and inter-modulation interference effects which may result from the operation of a Travelers Information Station in the vicinity of an AM broadcast station on the second or third adjacent channel, the applicant shall certify that he has considered these possible interference effects and, to the best of his knowledge, does not foresee harmful interference occurring to broadcast stations operating on 550 kHz, 560 kHz, 1580 kHz, or 1590 kHz.

(iii) A map showing the geographical location of each transmitter site and an estimate of the signal strength at the contour of the desired coverage area. For a cable system, the contour to be shown is the estimated field strength at 60 meters (197 feet) from any point on the cable. For a conventional radiating antenna, the estimated field strength contour at 1.5 km (0.93 mile) shall be shown. A contour map comprised of actual on-the-air measurements shall be submitted to the Commission within 60 days after station authorization or completion of station construction, whichever occurs later. A sufficient number of points shall be chosen at the specified distances (extrapolated measurements are acceptable) to adequately show compliance with the field strength limits.

(iv) For each transmitter site, the transmitter's output power, the type of antenna utilized, its length (for a cable system), its height above ground, distance from transmitter to the antenna, and the elevation above sea level at the transmitting site.

(3) Travelers Information Stations will be authorized on a secondary basis to stations authorized on a primary basis in the bands 510–535 and 1605–1715 kHz.

(4) A Travelers Information Station authorization may be suspended, modified, or withdrawn by the Commission without prior notice of right to hearing if necessary to resolve interference conflicts, to implement agreements with foreign governments, or in other circumstances warranting such action.

(5) The transmitting site of each Travelers' Information Station shall be restricted to the immediate vicinity of the following specified areas: Air, train, and bus transportation terminals, public parks and historical sites, bridges, tunnels, and any intersection of a Federal Interstate Highway with any other interstate, Federal, State, or local highway.

(6) A Travelers Information Station shall normally be authorized to use a single transmitter. However, a system of stations, with each station in the system employing a separate transmitter, may be authorized for a specified area provided sufficient need is demonstrated by the applicant.

(7) Travelers Information Stations shall transmit only noncommercial voice information pertaining to traffic and road conditions, traffic hazard and travel advisories, directions, availability of lodging, rest stops and service stations, and descriptions of local points of interest. It is not permissible to identify the commercial name of any business establishment whose service may be available within or outside the coverage area of a Travelers Information Station. However, to facilitate announcements concerning departures/arrivals and parking areas at air, train, and bus terminals, the trade name identification of carriers is permitted.

(b) *Technical standards.* (1) The use of 6K00A3E emission will be authorized, however N0N emission may be used for purposes of receiver quieting, but only for a system of stations employing "leaky" cable antennas.

(2) A frequency tolerance of 100 Hz shall be maintained.

(3) For a station employing a cable antenna, the following restrictions apply:

(i) The length of the cable antenna shall not exceed 3.0 km (1.9 miles).

(ii) Transmitter RF output power shall not exceed 50 watts and shall be adjustable downward to enable the user to comply with the specified field strength limit.

(iii) The field strength of the emission on the operating frequency shall not exceed 2 mV/m when measured with a standard field strength meter at a distance of 60 meters (197 feet) from any part of the station.

(4) For a station employing a conventional radiating antenna(s) (ex. vertical monopole, directional array) the following restrictions apply:

(i) The antenna height above ground level shall not exceed 15.0 meters (49.2 feet).

(ii) Only vertical polarization of antennas shall be permitted.

(iii) Transmitter RF output power shall not exceed 10 watts to enable the user to comply with the specified field strength limit.

(iv) The field strength of the emission on the operating frequency shall not exceed 2 mV/m when measured with a standard field strength meter at a distance of 1.50 km (0.93 miles) from the transmitting antenna system.

(5) For co-channel stations operating under different licenses, the following minimum separation distances shall apply:

(i) 0.50 km (0.31 miles) for the case when both stations are using cable antennas.

(ii) 7.50 km (4.66 miles) for the case when one station is using a conventional antenna and the other is using a cable antenna.

(iii) 15.0 km (9.3 miles) for the case when both stations are using conventional antennas.

(6) For a system of co-channel transmitters operating under a single authorization utilizing either cable or conventional antennas, or both, no minimum separation distance is quired.

(7) An applicant desiring to loca station that does not comply with separation requirements of this tion shall coordinate with the affec station.

(8) Each transmitter in a Trave Information Station shall be equipp with an audio low-pass filter. Su filter shall be installed between modulation limiter and the modula stage. At audio frequencies betwee kHz and 20 kHz this filter shall ha an attenuation greater than the tenuation at 1 kHz by at least:

$60 \log_{10} (f/3)$ decibels.

where "f" is the audio frequency kHz. At audio frequencies above kHz, the attenuation shall be at le 50 decibels greater than the atten ation at 1 kHz.

[43 FR 54791, Nov. 22, 1978; 44 FR 671 Nov. 23, 1979; 49 FR 48712, Dec. 14, 1984 amended at 54 FR 39740, Sept. 28, 1989]

§ 90.243 Mobile relay stations.

(a) Mobile relay stations under th part may be authorized only as fo lows:

(1) On frequencies below 450 MH mobile relay stations may be autho ized to operate only in the Police, Fi Local Government, Highway Main nance, Forestry Conservation, Powe Petroleum, Forest Products, Manuf turers, Telephone Maintenance, an Railroad Radio Services.

Outside the contiguous 48 State mobile relay operations below 4 MHz may also be authorized in th Business and Special Industrial Rad Services.

(2) Mobile relay stations will be a thorized on frequencies between 4 MHz and 470 MHz in all of the ser ices governed by this part except f the Radiolocation Service.

(3) Mobile relay stations will be a thorized on frequencies between 4 MHz and 512 MHz in all of the ser ices that have been allocated such fre quencies.

(b) Special provisions for mobi relay operations:

(1) In the Special Emergency Rad Service, medical services systems

50-160 MHz band are permitted
cross-banded for mobile and cen-
station operations with mobile
stations authorized to operate in
50-470 MHz band.

In the Business Radio Service,
le relay stations may be author-
on frequencies below 450 MHz
those frequencies are reserved
ow power operation (2 watts or
or for narrowband operation.
§ 90.271) For systems using low
r frequencies the maximum
it power shall not exceed 1 watt
he mobile relay antenna system
not be more than 13 m (40 ft)
e ground.

In the Railroad Radio Service,
le relay operation shall be on a
dary basis to other co-channel
tions.

Except where specifically pre-
d, a mobile relay station may be
orized to operate on any frequen-
vailable for assignment to base
ons.

A mobile station associated with
le relay station(s) may not be au-
zed to operate on a frequency
v 25 MHz.

Technical requirements for
le relay stations.

Each new mobile relay station
an output power of more than
watt, and authorized after Janu-
, 1972, that is activated by signals
v 50 MHz shall deactivate the sta-
upon cessation of reception of the
ating continuous coded tone
l. Licensees may utilize a combi-
n of digital selection and continu-
oded tone control where required
sure selection of only the desired
le relay station.

Mobile relay stations controlled
gnals above 50 MHz or authorized
to January 1, 1972, to operate
v 50 MHz are not required to in-
orate coded signal or tone control
es unless the transmitters are
istently activated by undesired
ls and cause harmful interference
her licensees. If activation by un-
ed signals causes harmful inter-
nce, the Commission will require
installation of tone control equip-
t within 90 days of a notice to the
see.

(3) Except in the Railroad Radio Service, each new mobile-relay station authorized after January 1, 1972, shall be equipped for automatic deactivation of the transmitter within 5 seconds after the signals controlling the station cease.

(4) Except in the Railroad Radio Service, each new mobile relay station authorized after January 1, 1972, during periods that it is not controlled from a manned fixed control point; shall have an automatic time delay or clock device that will deactivate the station not more than 3 minutes after its activation by a mobile unit.

(5) In the Railroad Radio Service, each mobile relay station, regardless of the frequency or frequencies of the signals by which it is activated shall be so designated and installed that it will be deactivated automatically when its associated receiver or receivers are not receiving a signal on the frequency or frequencies which normally activate it.

(6) Multiple mobile relay station radio systems shall use wireline or radio stations on fixed frequencies for any necessary interconnect circuits between the mobile relay stations.

[43 FR 54791, Nov. 22, 1978, as amended at 49 FR 40177, Oct. 15, 1984; 50 FR 13606, Apr. 5, 1985; 50 FR 39680, Sept. 30, 1985; 50 FR 40976, Oct. 8, 1985; 54 FR 39740, Sept. 28, 1989]

§ 90.245 Fixed relay stations.

Except where specifically provided for, fixed relay stations shall be authorized to operate only on frequencies available for use by operational fixed stations.

§ 90.247 Mobile repeater stations.

A mobile station authorized to operate on a mobile service frequency above 25 MHz may be used as a mobile repeater to extend the communications range of hand-carried units subject to the following:

(a) Mobile repeaters and/or associated hand-carried transmitters may be assigned separate base/mobile frequencies for this use (including, in the Railroad Radio Service, any "base only" frequency in the 450–470 MHz range) in addition to the number of frequencies normally assignable to the licensee.

(b) In the Business and Special Industrial Radio Services on frequencies below 450 MHz, only low-power frequencies (2 watts or less output power) may be assigned for use by mobile repeaters or by hand-carried transmitters whose communications are directed to mobile repeaters, when separate frequencies are assigned for that purpose.

(c) Except as provided in paragraph (d) of this section, hand-carried transmitters whose communications will be automatically relayed by mobile stations shall be limited to a maximum output power of 2.5 watts.

(d) In the Railroad Radio Service, use of mobile repeaters is on a secondary basis to the stations of any other licensee. Hand-carried units used in connection with mobile repeaters in the Railroad Radio Service may operate only above 150 MHz and are limited to a maximum output power of 6 watts. The frequency and maximum power shall be specified in the station authorization.

(e) In the Railroad Radio Service, the output power of a mobile repeater station, when transmitting as a repeater station on the frequency used for communication with its associated pack-carried or hand-carried units, shall not exceed 6 watts except when the same frequency is also used by the same station for direct communication with vehicular mobile units or with one or more base stations.

(f) When automatically retransmitting messages originated by or destined for hand-carried units, each mobile station shall activate the mobile transmitter only with a continuous coded tone, the absence of which will de-activate the mobile transmitter. The continuous coded tone is not required when the mobile unit is equipped with a switch that activates the automatic mode of the mobile unit and an automatic time-delay device that de-activates the transmitter after any uninterrupted transmission period in excess of 3 minutes.

§ 90.249 Control stations.

Control stations associated with land mobile stations under this part shall be authorized to operate subject to following:

(a) *Frequencies for control stati* (1) Control stations may be authori to operate on frequencies available use by operational fixed stations.

(2) A control station associated w mobile relay station(s) may, at t option of the applicant, be assig the frequency of the associated mo station. In the Railroad Radio Ser such a control station may be assig any mobile service frequency availa for assignment to mobile stations that service. Such operation is o secondary basis to use of the frequ cy for regular mobile service commu cations.

(3) Control and fixed stations in t Public Safety and Special Emerge Radio Services may be authorized o temporary basis to operate on frequ cies available for base and mobile s tions between 152 and 450 MHz, wh there is an adequate showing th such operations cannot be conduc on frequencies allocated for assi ment to operational fixed statio Such operation will not be authori initially or renewed for periods excess of one year. Any such autho zation shall be subject to immedi termination if harmful interference caused to stations in the mobile se ice, or if the particular frequency is quired for mobile service operations the area concerned.

(b) [Reserved]

(c) A base station which is u intermittently as a control station f one or more associated mobile re stations of the same licensee shall o erate only on the mobile service fr quency assigned to the associa mobile relay station when operating a base station and on the mobile se ice frequency assigned to the associ ed mobile station when operating a control station. Authority for s dual classification and use must shown on the station authorizati When operating as a control stati the licensee must meet all control s tion requirements. In the Railro Radio Service base stations used inte mittently as control stations shall o erate only on a mobile service frequ cy which is available for assignment base stations.

R 54791, Nov. 22, 1978, as amended at
36376, Sept. 17, 1984]

50 **Meteor burst communications.**

teor burst communications may
uthorized for the use of private
stations subject to the following
sions:
Station operation is limited to
tate of Alaska only.
The frequency 44.20 MHz may be
for base station operation and
MHz for remote station oper-
on a primary basis. The frequen-
2.40 and 44.10 MHz may be used
ase and remote stations, respec-
, on a secondary basis to common
er stations utilizing meteor burst
nunications. Users shall cooperate
g themselves to the extent prac-
le to promote compatible oper-
.
The maximum transmitter
ut power shall not exceed 2000
s for base stations and 500 watts
emote stations.
Co-channel base stations of dif-
t licensees shall be located at
150 miles apart. A remote station
a base station of different licens-
hall be located at least 150 miles
t if the remote units of the differ-
icensees operate on the same fre-
cy. Waiver of this requirement
be granted if affected users agree
cooperative sharing arrangement.
The authorized emission designa-
o be used in F1E, F7W, G1E or
to allow for Phase Shift Keying
) or Frequency Shift Keying
).
The maximum authorized band-
h is 20 kHz (20 F1E, F7W, G1E or
).
Station identification in accord-
with § 90.425(a) or (b) shall only
equired for the base station.
) Stations may be required to
ply with additional conditions of
ation as necessary on a case-by-
basis as specified in the authori-
on.
Stations employing meteor burst
munications shall not cause inter-
nce to other stations operating in
rdance with the allocation table.
authorizations will be issued sub-
to the Commission's developmen-
rant procedure as outlined in subpart Q of this part. Prior to expiration of the developmental authorization, application Form 574 should be filed for issuance of a permanent authorization.

[48 FR 34043, July 27, 1983, as amended at 49 FR 48712, Dec. 14, 1984]

Subpart K—Standards for Special Frequencies or Frequency Bands

§ 90.251 Scope.

This subpart sets forth special requirements applicable to the use of certain frequencies or frequency bands.

[54 FR 39740, Sept. 28, 1989]

§ 90.253 Use of frequency 5167.5 kHz.

The frequency 5167.5 kHz may be used by any station authorized under this part to communicate with any other station in the State of Alaska for emergency communications. The maximum power permitted is 150 watts peak envelope power (PEP). All stations operating on this frequency must be located in or within 50 nautical miles (92.6 km) of the State of Alaska. This frequency may also be used by stations authorized in the Alaska-private fixed service for calling and listening, but only for establishing communication before switching to another frequency.

[49 FR 32201, Aug. 13, 1984]

§ 90.255 [Reserved]

§ 90.257 Assignment and use of frequencies in the band 72–76 MHz.

(a) The following criteria shall govern the authorization and use of frequencies within the band 72–76 MHz by fixed stations. (For call box operations see § 90.241).

(1) The following frequencies in the band 72–76 MHz may be used for fixed operations:

MHz: 72.02, 72.04, 72.06, 72.08, 72.10, 72.12, 72.14, 72.16, 72.18, 72.20, 72.22, 72.24, 72.26, 72.28, 72.30, 72.32, 72.34, 72.36, 72.38, 72.40, 72.42, 72.46, 72.50, 72.54, 72.58, 72.62, 72.64, 72.66, 72.68, 72.70, 72.72, 72.74, 72.76, 72.78, 72.80, 72.82, 72.84, 72.86, 72.88, 72.90, 72.92, 72.94, 72.96, 72.98, 75.42, 75.46, 75.50, 75.54, 75.58, 75.62, 75.64, 75.66, 75.68, 75.70, 75.72, 75.74, 75.76, 75.78, 75.80, 75.82, 75.84, 75.86, 75.88, 75.90, 75.92, 75.94, 75.96, 75.98.

(2) All authorizations are subject to the condition that no harmful interference will be caused to television reception on Channels 4 and 5.

(3) The applicant must agree to eliminate any harmful interference caused by his operation to TV reception on either Channel 4 or 5 that might develop by whatever means are necessary. Such action must be taken within 90 days of notification by the Commission. If such interference is not eliminated within the 90-day period, operation of the fixed station will be discontinued.

(4) Vertical polarization must be used.

(5) Whenever it is proposed to locate a 72-76 MHz fixed station less than 128 km (80 mi.) but more than 16 km (10 mi.) from the site of a TV transmitter operating on either channel 4 or 5, or from the post office of a community in which such channels are assigned but not in operation, the fixed station shall be authorized only if there are fewer than 100 family dwelling units (as defined by the U.S. Bureau of the Census), excluding units 112 or more km (70 mi.) distant from the TV antenna site, located within a circle centered at the location of the proposed fixed station. The radius shall be determined by use of the following chart entitled, "Chart for Determining Radius From Fixed Station in 72-76 MHz Band to Interference Contour Along Which 10 Percent of Service From Adjacent Channel Television Station Would Be Destroyed." Two charts are available, one for Channel 4, and one for Channel 5. The Commission may, however, in a particular case, authorize the location of a fixed station within a circle containing 100 or more family dwelling units upon a showing that:

(i) The proposed site is the only suitable location.

(ii) It is not feasible, technically or otherwise, to use other available frequencies.

(iii) The applicant has a plan to control any interference that might develop to TV reception from his operations.

(iv) The applicant is financially
and agrees to make such adjustme
in the TV receivers affected as may
necessary to eliminate any interf
ence caused by his operations.

(v) All applications seeking auth
ity to operate with a separation of
than 16 km (10 mi.) will be retur
without action.

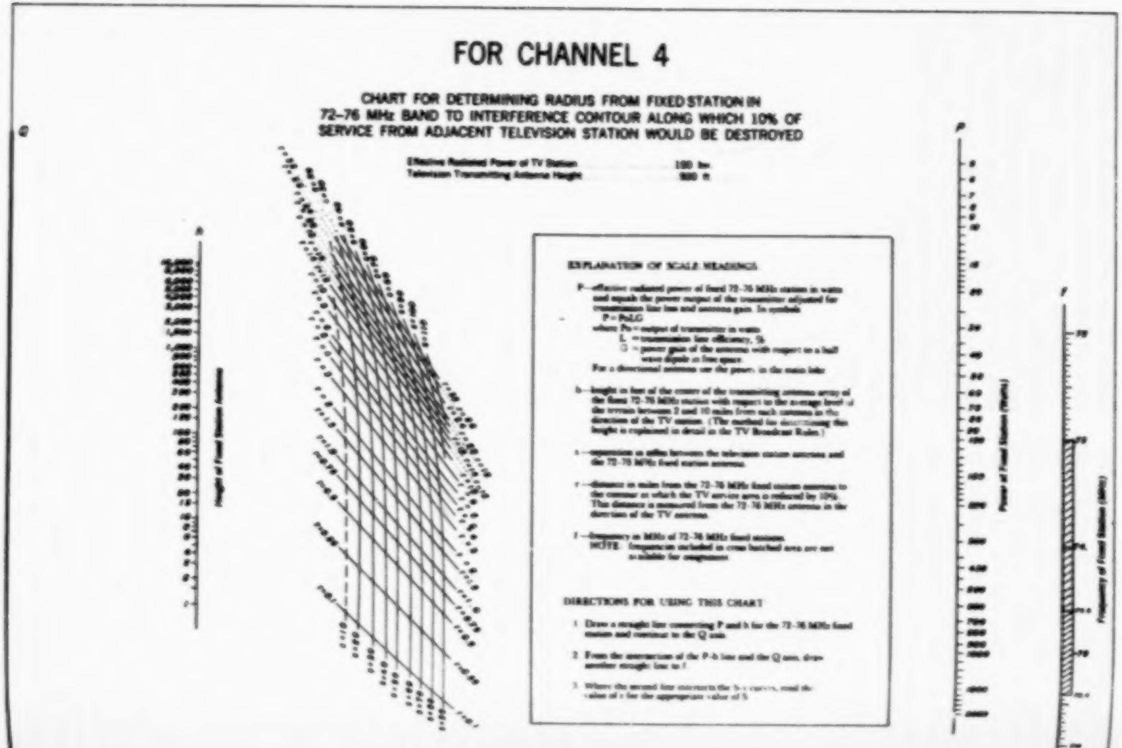
(b) The following criteria sh
govern the authorization and us
frequencies within the band 72-
MHz by mobile stations in the Spec
Industrial, Manufacturers, Fo
Products, and Railroad Radio Servi

(1) Mobile operation on frequenc
in the 72-76 MHz band (
§ 90.257(a)(1)) is subject to the con
tion that no interference is caused
the reception of television stations o
erating on Channel 4 or 5. Interf
ence will be considered to occur whe
ever reception of a regularly used te
vision signal is impaired by signals
diated by stations operating und
these rules in the 72 to 76 MHz ba
regardless of the quality of such rece
tion or the strength of the signal us
In order to minimize the hazard
such interference, it shall be the du
of the licensee to determine wheth
interference is being caused to tele
sion reception, wherever television
ceivers other than those under th
control of the licensee, are locate
within 31 m. (100 ft.) of any poi
where the stations licensed und
these rules may be operated. In a
case, it shall be the responsibility
the licensee to correct, at its own e
pense, any such interference and
the interference cannot be eliminat
by the application of suitable te
niques, the operation of the offendi
transmitter shall be suspended. If th
complainant refuses to permit the
censee to apply remedial techniqu
which demonstrably will eliminate th
interference without impairment
the original reception, the licensee
absolved of further responsibility.

(2) The maximum transmitte
output power that will be authoriz
is 1 watt; and each station authoriz
will be classified and licensed as
mobile station. Any units of such
station, however, may be used to pr
vide the operational functions of
base or fixed station. The antenna

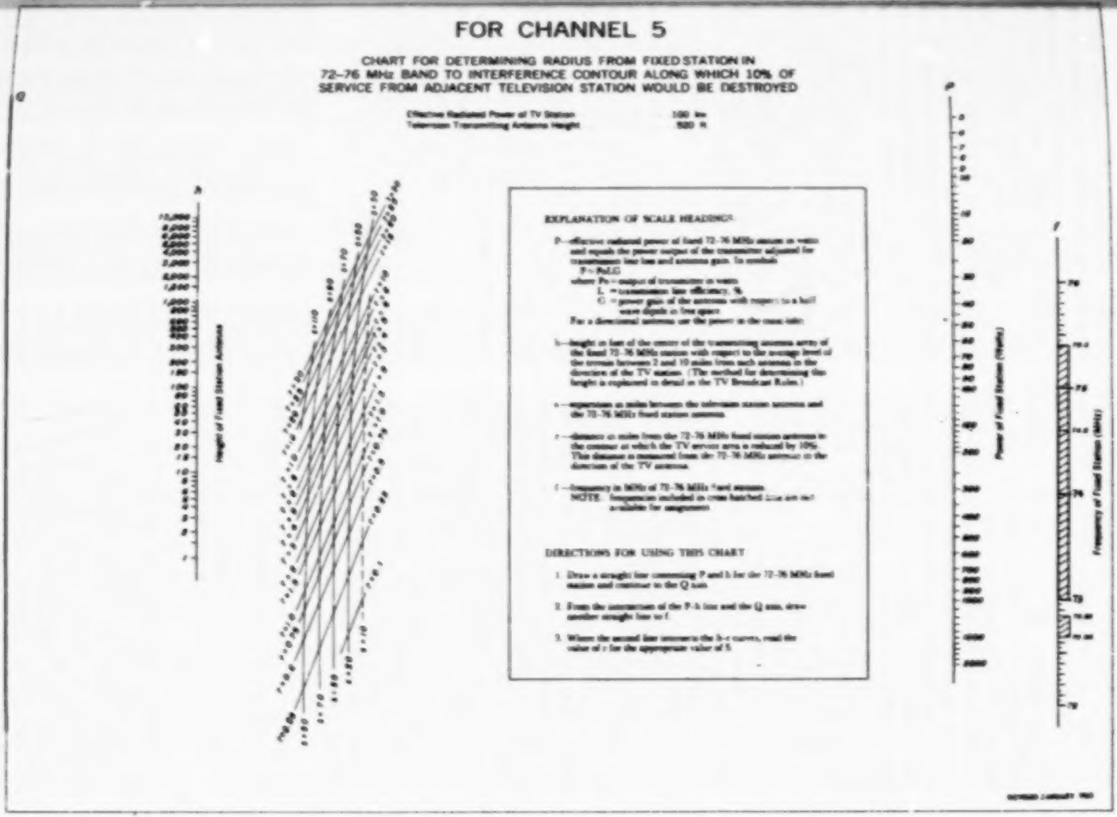
nsmitters operating on these fre-
ncies must be directly mounted or
alled upon the transmitting unit:
ept that when permanently in-
lled aboard a vehicle, antenna and
nsmitter may be separated as re-
red for convenience in mounting.
rizontal polarization will not be al-
ed; and the gain of antennas em-
yed shall not exceed that of a half-
e dipole. The maximum bandwidth
that will be authorized is 20 kHz. Tone control transmissions are permitted.

(c) Radio remote control of models is permitted on frequencies 10 kHz removed from these frequencies authorized for fixed and mobile operations in the 72-76 MHz band. Remote control operations are secondary to operation of fixed and mobile stations as provided for in this section.



FOR CHANNEL 4

CHART FOR DETERMINING RADIUS FROM FIXED STATION IN 72–76 MHz BAND TO INTERFERENCE CONTOUR ALONG WHICH 10% OF SERVICE FROM ADJACENT TELEVISION STATION WOULD BE DESTROYED



FOR CHANNEL 5

CHART FOR DETERMINING RADIUS FROM FIXED STATION IN 72–76 MHz BAND TO INTERFERENCE CONTOUR ALONG WHICH 10% OF SERVICE FROM ADJACENT TELEVISION STATION WOULD BE DESTROYED

Effective Radiated Power of TV Station 100 kw
Television Transmitting Antenna Height 500 ft

EXPLANATION OF SCALE HEADINGS

P—effective radiated power of fixed 72–76 MHz station in watts and equals the power output of the transmitter adjusted for transmission line loss and antenna gain. In symbols:
P = PoLG
where Po = output of transmitter in watts.
L = transmission line efficiency, %.
G = power gain of the antenna with respect to a half wave dipole in free space.
For a directional antenna use the power in the main lobe.

h—height in feet of the center of the transmitting antenna array of the fixed 72–76 MHz station with respect to the average level of the terrain between 2 and 10 miles from such antenna in the direction of the TV station. (The method for determining this height is explained in detail in the TV Broadcast Rules.)

s—separation in miles between the television station antenna and the 72–76 MHz fixed station antenna.

r—distance in miles from the 72–76 MHz fixed station antenna to the contour at which the TV service area is reduced by 10%. This distance is measured from the 72–76 MHz antenna in the direction of the TV antenna.

f—frequency in MHz of 72–76 MHz fixed station.
NOTE: frequencies included in cross hatched area are not available for assignment.

DIRECTIONS FOR USING THIS CHART

1. Draw a straight line connecting P and h for the 72–76 MHz fixed station and continue to the Q axis.
2. From the intersection of the P-h line and the Q axis, draw another straight line to f.
3. Where the second line intersects the h-r curves, read the value of r for the appropriate value of S.

Q
P
Power of Fixed Station (Watts)
f
Frequency of Fixed Station (MHz)
h
Height of Fixed Station Antenna

[43 FR 54791, Nov. 22, 1978; 44 FR 32219, June 5, 1979, as amended at 47 FR 51879, Nov. 18, 1982; 49 FR 41249, Oct. 22, 1984; 54 FR 38681, Sept. 20, 1989]

§ 90.259 Assignment and use of frequencies in the bands 216–220 MHz and 1427–1435 MHz.

Frequencies in the bands 216-220 MHz and 1427-1435 MHz may be assigned to applicants under this part provided the band is listed in the individual radio service under which they establish eligibility. Use of these bands is limited to telemetering purposes only and all operation is secondary to Federal Government operations. Operation in the band 216-220 MHz is also secondary to the maritime mobile service and operation in the band 1427-1429 MHz is also secondary to the space operation service (earth-to-space). Base stations authorized in these bands shall be used to perform telecommand functions with associated mobile telemetering stations. Base stations may also command actions by the vehicle itself, but will not be authorized solely to perform this function. Airborne use will not be authorized. Each application will be coordinated with the Federal Government by the Federal Communications Commission and is subject to such technical and operational limitations as may be imposed by the government. Each application should include precise information concerning emission characteristics, transmitter frequency deviation, output power, type and directional characteristics, if any, of the antenna, and the minimum necessary hours of operation.

[43 FR 54791, Nov. 22, 1978, as amended at 54 FR 38681, Sept. 20, 1989]

§ 90.261 Assignment and use of frequencies in the band 450–470 MHz for fixed operations.

The following frequencies may be assigned for fixed operations, on a secondary basis to land mobile operations, to eligibles in the services indicated. All such use of these frequencies for fixed systems is limited to locations 85 or more miles (136.79 or more km.) from the center of any urbanized area of 600,000 or more population except that the distance may be 65 miles (104.6 km.), if the output power does not exceed 20 watts. All such fixed systems are limited to a maximum of two frequencies and must
employ directional antennas wi
front-to-back ratio of at least 15
except that omnidirectional anten
having unity gain may be emplo
for stations communicating wit
minimum of three receiving locati
encompassed in a sector of at le
160° in azimuth. For two-freque
systems, the separation between tr
mit-receive frequencies is 5
Fixed stations located more than
km. (85 miles) from the center of
banized areas of 600,000 or more po
lation and operating on frequencie
longer available for that use may c
tinue indefinitely until such time
modification involving addition of
facilities is proposed. Such use is, h
ever, on a secondary basis to l
mobile operations and harmful in
ference may not be caused to l
mobile stations. The centers of urb
ized areas are determined from the
pendix, page 226, of the U.S. Co
merce publication "Air Line Dista
Between Cities in the United State
Urbanized areas of 600,000 or m
population are defined in the U
Census of Population 1970, Vol.
table 20, pages 1-74.

(a) The following frequencies m
be assigned to fixed stations in t
Public Safety and Special Emerge
Radio Services, on a secondary basi
land mobile operations in the Indus
al (except Business) and Land Tra
portation Radio Services.

Frequencies MHz: 451.025, 451.
451.075, 451.100, 451.125, 451.150, 451.
451.200, 451.225, 451.250, 451.275, 451.
451.325, 451.350, 451.375, 451.400, 451.
451.450, 451.475, 451.500, 451.525, 451.
451.575, 451.600, 451.625, 451.650, 451.
451.700, 451.725, 451.750, 451.775, 451.
451.850, 451.875, 451.900, 451.925, 451.
451.975, 452.000, 452.025, 452.050, 452.
452.100, 452.125, 452.150, 452.175, 452.
452.225, 452.250, 452.275, 452.300, 452.
452.350, 452.375, 452.400, 452.425, 452.
452.475, 452.500, 452.625, 452.650, 452.
452.700, 452.725, 452.750, 452.775, 452.
452.825, 452.850, 452.875, 452.900, 452.
453.000, 456.025, 456.050, 456.075, 456.
456.125, 456.150, 456.175, 456.200, 456.
456.250, 456.275, 456.300, 456.325, 456.
456.375, 456.400, 456.425, 456.450, 456.
456.500, 456.525, 456.550, 456.575, 456.
456.625, 456.650, 456.675, 456.700, 456.
456.750, 456.775, 456.825, 456.850, 456.
456.900, 456.925, 456.950, 456.975, 457.
457.025, 457.050, 457.075, 457.100, 457.

457.150, 457.175, 457.200, 457.225, 457.250, 457.275, 457.300, 457.325, 457.350, 457.375, 457.400, 457.425, 457.450, 457.475, 457.500, 457.625, 457.650, 457.675, 457.700, 457.725, 457.750, 457.775, 457.800, 457.825, 457.850, 457.875, 457.900, 457.975, 458.000, 462.200, 462.225, 462.250, 462.275, 462.300, 462.325, 462.350, 462.375, 462.400, 462.425, 462.450, 462.475, 462.500, 462.525, 467.200, 467.225, 467.250, 467.275, 467.300, 467.325, 467.350, 467.375, 467.400, 467.425, 467.450, 467.475, 467.500, 467.525.

(b) The following frequencies may be assigned to fixed stations in the Industrial Radio Services (except Business) on a secondary basis to land mobile operations in the Public Safety, Special Emergency, and Land Transportation Radio Services.

Frequencies MHz: 452.050, 452.100, 452.150, 452.200, 452.225, 452.250, 452.275, 452.300, 452.325, 452.350, 452.375, 452.400, 452.425, 452.450, 452.475, 452.500, 452.625, 452.650, 452.675, 452.700, 452.725, 452.750, 452.775, 452.800, 452.825, 452.850, 452.875, 452.900, 453.050, 453.100, 453.150, 453.200, 453.225, 453.250, 453.275, 453.300, 453.325, 453.350, 453.375, 453.400, 453.425, 453.450, 453.475, 453.500, 453.525, 453.550, 453.575, 453.600, 453.625, 453.650, 453.675, 453.700, 453.725, 453.750, 453.775, 453.800, 453.825, 453.850, 453.875, 453.900, 453.925, 453.950, 453.975, 457.050, 457.100, 457.150, 457.200, 457.225, 457.250, 457.275, 457.300, 457.325, 457.350, 457.375, 457.400, 457.425, 457.450, 457.475, 457.500, 457.525, 457.550, 457.575, 457.600, 457.625, 457.650, 457.675, 457.700, 457.725, 457.750, 457.775, 457.800, 457.825, 457.850, 457.875, 457.900, 458.050, 458.100, 458.150, 458.200, 458.225, 458.250, 458.275, 458.300, 458.325, 458.350, 458.375, 458.400, 458.425, 458.450, 458.475, 458.500, 458.525, 458.550, 458.575, 458.600, 458.625, 458.650, 458.675, 458.700, 458.725, 458.750, 458.775, 458.800, 458.825, 458.850, 458.875, 458.900, 458.925, 458.950, 458.975, 460.025, 460.050, 460.075, 460.100, 460.125, 460.150, 460.175, 460.200, 460.225, 460.250, 460.275, 460.300, 460.325, 460.350, 460.375, 460.400, 460.425, 460.450, 460.475, 460.500, 460.525, 460.550, 460.575, 460.600, 460.625, 465.025, 465.050, 465.075, 465.100, 465.125, 465.150, 465.175, 465.200, 465.225, 465.250, 465.275, 465.300, 465.325, 465.350, 465.375, 465.400, 465.425, 465.450, 465.475, 465.500, 465.525, 465.550, 465.575, 465.600, 465.625.

(c) The following frequencies may be assigned to fixed stations in the Land Transportation Radio Services on a secondary basis to land mobile operations in the Public Safety and Industrial (except Business) Radio Services.

451.025, 451.050, 451.075, 451.100, 451.125, 451.150, 451.175, 451.200, 451.225, 451.250, 451.275, 451.300, 451.325, 451.350, 451.375, 451.400, 451.425, 451.450, 451.475, 451.500, 451.525, 451.550, 451.575, 451.600, 451.625, 451.650, 451.675, 451.700, 451.725, 451.750, 451.775, 451.825, 451.850, 451.875, 451.900, 451.925, 451.950, 451.975, 452.000, 452.025, 452.075, 452.125, 452.175, 452.975, 453.000, 453.050, 453.100, 453.150, 453.200, 453.225, 453.250, 453.275, 453.300, 453.325, 453.350, 453.375, 453.400, 453.425, 453.450, 453.475, 453.500, 453.525, 453.550, 453.575, 453.600, 453.625, 453.650, 453.675, 453.700, 453.725, 453.750, 453.775, 453.800, 453.825, 453.850, 453.875, 453.900, 453.925, 453.950, 453.975, 456.025, 456.050, 456.075, 456.100, 456.125, 456.150, 456.175, 456.200, 456.225, 456.250, 456.275, 456.300, 456.325, 456.350, 456.375, 456.400, 456.425, 456.450, 456.475, 456.500, 456.525, 456.550, 456.575, 456.600, 456.625, 456.650, 456.675, 456.700, 456.725, 456.750, 456.775, 456.825, 456.850, 456.875, 456.900, 456.925, 456.950, 456.975, 457.000, 457.025, 457.075, 457.125, 457.175, 457.975, 458.000, 458.050, 458.100, 458.150, 458.200, 458.225, 458.250, 458.275, 458.300, 458.325, 458.350, 458.375, 458.400, 458.425, 458.450, 458.475, 458.500, 458.525, 458.550, 458.575, 458.600, 458.625, 458.650, 458.675, 458.700, 458.725, 458.750, 458.775, 458.800, 458.825, 458.850, 458.875, 458.900, 458.925, 458.950, 458.975, 460.025, 460.050, 460.075, 460.100, 460.125, 460.150, 460.175, 460.200, 460.225, 460.250, 460.275, 460.300, 460.325, 460.350, 460.375, 460.400, 460.425, 460.450, 460.475, 460.500, 460.525, 460.550, 460.575, 460.600, 460.625, 462.200, 462.225, 462.250, 462.275, 462.300, 462.325, 462.350, 462.375, 462.400, 462.425, 462.450, 462.475, 462.500, 462.525, 465.025, 465.050, 465.075, 465.100, 465.125, 465.150, 465.175, 465.200, 465.225, 465.250, 465.275, 465.300, 465.325, 465.350, 465.375, 465.400, 465.425, 465.450, 465.475, 465.500, 465.525, 465.550, 465.575, 465.600, 465.625, 467.200, 467.225, 467.250, 467.275, 467.300, 467.325, 467.350, 467.375, 467.400, 467.425, 467.450, 467.475, 467.500, 467.525.

(d) Frequencies subject to § 90.75(c)(26) may be used secondarily for fixed operations subject to the technical limitations of this section.

[43 FR 54791, Nov. 22, 1978; 44 FR 32219, June 5, 1979, as amended at 48 FR 55744, Dec. 15, 1983; 50 FR 39680, Sept. 30, 1985; 50 FR 40976, Oct. 8, 1985; 52 FR 29856, Aug. 12, 1987]

§ 90.263 Substitution of frequencies below 25 MHz.

Frequencies below 25 MHz when shown in radio service frequency listings under this part will be assigned to base or mobile stations only upon a satisfactory showing that, from a safety of life standpoint, frequencies above 25 MHz will not meet the operational requirements of the applicant. These frequencies are available for assignment in many areas; however, in individual cases such assignment may be impracticable due to conflicting frequency use authorized to stations in other services by this and other countries. In such cases, a substitute frequency, if found to be available, may be assigned from the following bands 1605-1750, 2107-2170, 2194-2495, 2506-2850, 3155-3400, or 4438-4650 kHz. Since such assignments are in certain instances subject to additional technical and operation limitation, it is necessary that each application also include precise information concerning transmitter output power, type and directional characteristics, if any, of the antenna, and the minimum necessary hours of operation. (This section is not applicable to the Radiolocation Radio Service, subpart F.)

§ 90.264 Disaster communications between 2 and 10 MHz.

(a) The use of any particular frequency between 2 and 10 MHz is limited to those frequencies falling within the bands allocated to the fixed and land mobile services as indicated in § 2.106 of the Commission's Rules and Regulations.

(b) Only in the following circumstances will authority be extended to stations to operate on the frequencies between 2 and 10 MHz:

(1) To provide communications circuits in emergency and/or disaster situations, where safety of life and property are concerned;

(2) To provide standby and/or backup communications circuits to regular domestic communications circuits which have been disrupted by disasters and/or emergencies.

(c) The FCC will not accept responsibility for protection of the circuits from harmful interference caused by foreign operations.

(d) In the event that a complaint of harmful interference resulting from operation of these circuits is received from a foreign source, the offending circuit(s) must cease operation on the particular frequency concerned
diately upon notification by the
mission.

(e) In order to accomodate the
tions described in paragraphs (c)
(d) of this section, the equipment
be capable of transmitting and
ing on any frequency within the
between 2 and 10 MHz and
immediate change among the
cies.

(f) Only 2K80J3E, 100HA1A
those emission types listed
§ 90.237(g) are permitted.

(g) Applicants must fulfill
requirements set out in § 90.17
and shall submit disaster
tions plans pursuant to § 90.129(m).

(h) Training exercises which
use of these frequencies for more
420 minutes per week, cumulative,
not authorized without prior
approval from the Commission.

[46 FR 52373, Oct. 27, 1981, as amended
48 FR 32831, July 19, 1983; 49 FR
Dec. 14, 1984]

§ 90.265 Assignment and use of
cies in the bands 169-172 MHz
406-413 MHz.

(a) The following frequencies
available for assignment to fixed
tions in the Power, Petroleum,
Products, Special Industrial,
and Railroad Radio Services subject
the provisions of this section:

FREQUENCIES (MHz)

169.425	171.125
169.450	171.825
169.475	171.850
169.500	171.875
169.525	171.900
170.225	171.925
170.250	406.125
170.275	406.175
170.300	409.675
170.325	409.725
171.025	412.625
171.050	412.675
171.075	412.725
171.100	412.775

(1) The use of these frequencies
limited to transmitting hydrological
meteorological data.

(2) All use of these frequencies
a secondary basis to Federal
ment stations and the hydrological
meteorological data being

ist be made available on request to vernmental agencies.

3) Other provisions of this part notthstanding, an operational fixed staon operating on these frequencies all not communicate with any staon in the mobile service unless writn authorization to do so has been obined from the Commission.

(4) Persons who desire to operate ations on these frequencies should mmunicate with the Commission for structions concerning the procedure be followed in filing formal applicaon.

(b) The following frequencies are ailable for wireless microphone opations to eligibles in this part, subct to the provisions of this paraaph:

Frequencies (MHz)

9.445	170.245
71.045	171.845
9.505	170.305
71.105	171.905

(1) The emission bandwidth shall ot exceed 54 kHz.

(2) The output power shall not xceed 50 milliwatts.

(3) The frequency stability of wiress microphones shall limit the total mission to within ±32.5 kHz of the ssigned frequency.

(4) Wireless microphone operations re unprotected from interference rom other licensed operations in the and. If any interference from wireless microphone operation is received by ny Government or non-Government peration, the wireless microphone must cease operation on the frequency involved. Applications are subject to Government coordination.

(Secs. 4(i) and 303(r), Communications Act of 1934, as amended, §§ 0.131 and 0.331 of the Commission's Rules and 5 U.S.C. 553 (b)(3)(B) and (d)(3))

[49 FR 20506, May 15, 1984]

§ 90.266 Long distance communications on frequencies between 2 and 25 MHz.

(a) The use of any particular frequency between 2 and 25 MHz is limited to those frequencies falling within the bands allocated to the fixed and land mobile services as indicated in § 2.106 of the Commission's Rules and Regulations.

(b) Only in the following circumstances will authority be extended to stations to operate on the frequencies between 2 and 25 MHz:

(1) To provide communications circuits to support operations which are highly important to the national interest and where other means of telecommunication are unavailable;

(2) To provide standby and/or backup communications circuits to regular domestic communications circuits which have been disrupted by disasters and/or emergencies.

(c) No protection is afforded to users of these frequencies from harmful interference caused by foreign operations.

(d) In the event that a complaint of harmful interference resulting from operation of these circuits is received from a foreign source, the offending circuit(s) must cease operation on the particular frequency concerned immediately upon notification by the Commission.

(e) In order to accommodate the situations described in paragraphs (c) and (d) of this section, the equipment shall be capable of transmitting and receiving on any frequency within the bands between 2 and 25 MHz and capable of immediate change among the frequencies, provided, however, that this requirement does not apply to equipment manufactured prior to August 15, 1983.

(f) Only 2K80J3E, 100HA1A, 100HA1B and those emission types listed in § 90.237(g) are permitted.

(g) Applicants must fulfill eligibility requirements set out in § 90.63(d)(1), § 90.65(c)(1), § 90.73(d)(1) or § 90.81(d)(14) and shall submit communications plans pursuant to § 90.129(o).

(h) Exercises or circuits tests which require use of these frequencies for more than seven hours per week cumulative are prohibited unless prior written approval is obtained from the Commission.

[48 FR 32996, July 20, 1983, as amended at 49 FR 48712, Dec. 14, 1984; 52 FR 29856, Aug. 12, 1987]

§ 90.267 Assignment and use of 12.5 kHz frequency offsets.

(a) Frequencies separated by 12.5 kHz from regularly assignable frequencies in the 450–470 MHz band, which are listed in the table at paragraph (b) of this section may be assigned in the land mobile services in accordance with the following conditions:

(1) All stations shall be licensed as mobiles but may serve the functions of base, fixed or mobile relay stations. Except in the Special Industrial Radio Service, stations are limited to 2 watts output power. Stations operating on offsets available exclusively in the Special Industrial Radio Service may be authorized an effective radiated power of up to 100 watts.

(2) Except for stations authorized on offsets available exclusively in the Special Industrial Radio Service, all operations shall be on a secondary basis to the primary operations and shall be entitled to no protection from such stations. Stations operating on offsets available exclusively in the Special Industrial Radio Service shall be licensed on a primary basis.

(3) Where the primary channel availability is indicated in more than one service in the table at paragraph (b) of this section, the frequency coordination requirements in § 90.175 apply in all such services (See § 90.555(a) for identification of service abbreviations).

(4) Wide area operations will not be authorized. The area of normal day-to-day operations shall be described in the application in terms of maximum distance from a geographical center (latitude and longitude).

(5) Applicants for stations under this part shall provide a statement of proposed use, but are otherwise exempt from any limitation on the number of frequencies assignable contained elsewhere in part 90.

(6) Antennas of mobile stations used as fixed stations communicating with one or more associated stations located within 45 degrees of azimuth shall be directional and have a front to back ratio of at least 15 dB. Except as provided below, the height of the antenna used at any mobile station serving as a base, fixed or mobile relay station may not exceed 7 m. (20 ft.)
ground.

(i) No limit shall be pla
length or height above grou
commercially manufacture
transmission line when th
sion line is terminated in a
ing load and is routed at le
ft.) interior to the edge of
ture or is routed below grou

(ii) Only sea-based station
tral alarm stations operat
quencies allocated for cent
protection operations, may
tennas mounted not more
(20 ft.) above the man-mad
ing structure, including ant
tures.

(iii) Stations operating
available exclusively in the
dustrial Radio Service may
ized an antenna height up
(100 ft.) above ground.

(b) Frequencies available
ment under this section are

OFFSET CHANNELS AVAILABLE IN
INDICATED

Frequency	
451.0375	IW
451.0625	IW
451.0875	IW
451.1125	IW
451.1375	IW
451.1625	IF,
451.1875	IF,
451.2125	IF,
451.2375	IF,
451.2625	IF,
451.2875	IF,
451.3125	IT.
451.3375	IT.
451.3625	IF,
451.3875	IF,
451.4125	IF,
451.4375	IF,
451.4625	IF,
451.4875	IF,
451.5125	IF,
451.5375	IF,
451.5625	IF,
451.5875	IF,
451.6125	IF,
451.6375	IF,
451.6625	IF,
451.6875	IF,
451.7125	IF,
451.7375	IF,
451.7625	IF,
451.7875	IS.
451.8125	IS.
451.8375	IS.
451.8625	IS.
451.8875	IS.
451.9125	IS.

OFFSET CHANNELS AVAILABLE IN SERVICES INDICATED—Continued

Frequency	
.9375	IS.
.9625	IS.
.9875	IS.
2.0125	IS.
2.0375	IS, LX.
2.0625	IS, LX.
2.0875	IS, LX.
2.1125	IS, LX.
2.1375	IS, LX.
2.1625	IS, LX.
2.1875	IS, LX.
2.2125	LX.
2.2375	LX.
2.2625	LX.
2.2875	LX.
2.3125	LM, LR, LX.
2.3375	LM, LR, LX.
2.3625	LM, LR, LX.
2.3875	LM, LR, LX.
2.4125	LM, LR, LX.
2.4375	LM, LR, LX.
2.4625	LM, LR, LX.
2.4875	LM, LR, LX.
2.5125	LA, LX.
2.5375	LA.
452.5625	LA.
452.5875	LA.
452.6125	LA, LM.
452.6375	LM.
452.6625	LM.
452.6875	LM.
452.7125	LM.
452.7375	LM.
452.7625	LM, LR.
452.7875	LM, LR.
452.8125	LM, LR.
452.8375	LM, LR.
452.8625	LM, LR.
452.8875	LM, LR.
452.9125	LR.
452.9375	LR.
452.9625	IY, LR.
452.9875	IY.
453.0125	PL, PS.
453.0375	PF, PH, PL, PO, PP.
453.0625	PF, PH, PL, PO, PP.
453.0875	PF, PH, PL, PO, PP.
453.1125	PF, PH, PL, PO, PP.
453.1375	PF, PH, PL, PO, PP.
453.1625	PF, PH, PL, PO, PP.
453.1875	PF, PH, PL, PO, PP.
453.2125	PF, PH, PL, PO, PP.
453.2375	PF, PH, PL, PO, PP.
453.2625	PF, PH, PL, PO, PP.
453.2875	PF, PH, PL, PO, PP.
453.3125	PF, PH, PL, PO, PP.

OFFSET CHANNELS AVAILABLE IN SERVICES INDICATED—Continued

Frequency	
453.3375	PF, PH, PL, PO, PP.
453.3625	PF, PH, PL, PO, PP.
453.3875	PF, PH, PL, PO, PP.
453.4125	PF, PH, PL, PO, PP.
453.4375	PF, PH, PL, PO, PP.
453.4625	PF, PH, PL, PO, PP.
453.4875	PF, PH, PL, PO, PP.
453.5125	PF, PH, PL, PO, PP.
453.5375	PF, PH, PL, PO, PP.
453.5625	PF, PH, PL, PO, PP.
453.5875	PF, PH, PL, PO, PP.
453.6125	PF, PH, PL, PO, PP.
453.6375	PF, PH, PL, PO, PP.
453.6625	PF, PH, PL, PO, PP.
453.6875	PF, PH, PL, PO, PP.
453.7125	PF, PH, PL, PO, PP.
453.7375	PF, PH, PL, PO, PP.
453.7625	PF, PH, PL, PO, PP.
453.7875	PF, PH, PL, PO, PP.
453.8125	PF, PH, PL, PO, PP.
453.8375	PF, PH, PL, PO, PP.
453.8625	PF, PH, PL, PO, PP.
453.8875	PF, PH, PL, PO, PP.
453.9125	PF, PH, PL, PO, PP.
453.9375	PF, PH, PL, PO, PP.
453.9625	PF, PH, PL, PO, PP.
453.9875	PL.
454.0125	Not available (adjacent to domestic public).
454.025 to 454.975	Domestic public.
455.050 to 455.950	Broadcast auxiliary.
456.0125	Not available (adjacent to broadcast auxiliary).
456.0375	IW.
456.0625	IW.
456.0875	IW.
456.1125	IW.
456.1375	IW.

OFFSET CHANNELS AVAILABLE IN SERVICES INDICATED—Continued

Frequency	
456.1625	IF, IP, IT, IW, IX.
456.1875	IF, IP, IT, IW, IX.
456.2125	IF, IP, IT, IW, IX.
456.2375	IF, IP, IT, IW, IX.
456.2625	IF, IP, IT, IW, IX.
456.2875	IF, IP, IT, IW, IX.
456.3125	IT.
456.3375	IT.
456.3625	IF, IP, IT, IW, IX.
456.3875	IF, IP, IT, IW, IX.
456.4125	IF, IP, IT, IW, IX.
456.4375	IF, IP, IT, IW, IX.
456.4625	IF, IP, IT, IW, IX.
456.4875	IF, IP, IT, IW, IX.
456.5125	IF, IP, IT, IW, IX.
456.5375	IF, IP, IT, IW, IX.
456.5625	IF, IP, IT, IW, IX.
456.5875	IF, IP, IT, IW, IX.
456.6125	IF, IP, IT, IW, IX.
456.6375	IF, IP, IT, IW, IX.
456.6625	IF, IP, IT, IW, IX.
456.6875	IF, IP, IT, IW, IX.
456.7125	IF, IP, IS.
456.7375	IF, IP, IS.
456.7625	IF, IP, IS.
456.7875	IS.
456.8125	IS.
456.8375	IS.
456.8625	IS.
456.8875	IS.
456.9125	IS.
456.9375	IS.
456.9625	IS.
456.9875	IS.
457.0125	IS.
457.0375	IS, LX.
457.0625	IS, LX.
457.0875	IS, LX.
457.1125	IS, LX.
457.1375	IS, LX.
457.1625	IS, LX.
457.1875	IS, LX.
457.2125	LX.
457.2375	LX.
457.2625	LX.
457.2875	LX.
457.3125	LM, LR, LX.
457.3375	LM, LR, LX.
457.3625	LM, LR, LX.
457.3875	LM, LR, LX.
457.4125	LM, LR, LX.
457.4375	LM, LR, LX.
457.4625	LM, LR, LX.
457.4875	LM, LR, LX.
457.5125	IB, LX.
457.5375	IB.
457.5625	IB.
457.5875	IB.
457.6125	IB, LM.
457.6375	LM.
457.6625	LM.
457.6875	LM.
457.7125	LM.
457.7375	LM.
457.7625	LM, LR.
457.7875	LM, LR.
457.8125	LM, LR.
457.8375	LM, LR.
457.8625	LM, LR.

OFFSET CHANNELS AVAILABLE IN SERVI INDICATED—Continued

Frequency	
457.8875	LM, LR.
457.9125	LR.
457.9375	LR.
457.9625	IY, LR.
457.9875	IY.
458.0125	PS.
458.0375	PF, PH, PL, PP, PS.
458.0625	PF, PH, PL, PP, PS.
458.0875	PF, PH, PL, PP, PS.
458.1125	PF, PH, PL, PP, PS.
458.1375	PF, PH, PL, PP, PS.
458.1625	PF, PH, PL, PP, PS.
458.1875	PF, PH, PL, PP, PS.
458.2125	PF, PH, PL, PP.
458.2375	PF, PH, PL, PP.
458.2625	PF, PH, PL, PP.
458.2875	PF, PH, PL, PP.
458.3125	PF, PH, PL, PP.
458.3375	PF, PH, PL, PP.
458.3625	PF, PH, PL, PP.
458.3875	PF, PH, PL, PP.
458.4125	PF, PH, PL, PP.
458.4375	PF, PH, PL, PP.
458.4625	PF, PH, PL, PP.
458.4875	PF, PH, PL, PP.
458.5125	PF, PH, PL, PP.
458.5375	PF, PH, PL, PP.
458.5625	PF, PH, PL, PP.
458.5875	PF, PH, PL, PP.
458.6125	PF, PH, PL, PP.
458.6375	PF, PH, PL, PP.
458.6625	PF, PH, PL, PP.
458.6875	PF, PH, PL, PP.
458.7125	PF, PH, PL, PP.
458.7375	PF, PH, PL, PP.
458.7625	PF, PH, PL, PP.
458.7875	PF, PH, PL, PP.

SET CHANNELS AVAILABLE IN SERVICES INDICATED—Continued

Frequency	
	PF, PH, PL, PO, PP.
	PF, PH, PL, PO, PP.
	PF, PH, PL, PO, PP.
	PF, PH, PL, PO, PP.
	PF, PH, PL, PO, PP.
	PF, PH, PL, PO, PP.
	PF, PH, PL, PO, PP.
	PL.
	(Not available, adjacent to domestic public).
to 459.975	Domestic Public.
	(Not available, adjacent to domestic public).
	PP.
	PP.
	PP.
	PP.
	PP.
	PP.
	PP.
	PP.
	PP.
	PP.
	PP.
	PP.
	PP.
	PP.
	PP.
	PP.
	PP.
	PP.
	PP.
	PP.
	PF, PP, PS.
	PF, PP, PS.
	PF, PP, PS.
	PF.
	PF.
	PF.
	IB.
	IB.
	IB.
	IB.
	IB.
	IB.
	IB.
	IB.
	IB.
	IB.
	IB.[1]
	IB.[1]
	IB.[1]
	IB.[1]
	IB.[1]
	IB.
	IB.
	IB.
	IB.

OFFSET CHANNELS AVAILABLE IN SERVICES INDICATED—Continued

Frequency	
461.1375	IB.
461.1625	IB.
461.1875	IB.
461.2125	IB.
461.2375	IB.
461.2625	IB.
461.2875	IB.
461.3125	IB.
461.3375	IB.
461.3625	IB.
461.3875	IB.
461.4125	IB.
461.4375	IB.
461.4625	IB.
461.4875	IB.
461.5125	IB.
461.5375	IB.
461.5625	IB.
461.5875	IB.
461.6125	IB.
461.6375	IB.
461.6625	IB.
461.6875	IB.
461.7125	IB.
461.7375	IB.
461.7625	IB.
461.7875	IB.
461.8125	IB.
461.8375	IB.
461.8625	IB.
461.8875	IB.
462.0125	IB.
462.0375	IB.
462.0625	IB.
462.0875	IB.
462.1125	IB.
462.1375	IB.
462.1625	IB.
462.1875	IB, IX.
462.2125	IX.
462.2375	IX.
462.2625	IX.
462.2875	IX.
462.3125	IX.
462.3375	IX.
462.3625	IX.
462.3875	IX.
462.4125	IX.
462.4375	IX.
462.4625	IF, IP, IT, IW, IX.
462.4875	IF, IP, IT, IW, IX.
462.5125	IF, IP, IT, IW, IX.
462.5375	Not available, adjacent to general mobile.
462.550 to 462.725	(Not available—general mobile.)
462.7375	Not available, adjacent to general mobile.
462.7625	IB.
462.7875	IB.
462.8125	IB.
462.8375	IB.
462.8625	IB.
462.8875	IB.
462.9125	IB.
462.9375	PS.
462.9625	PS.

OFFSET CHANNELS AVAILABLE IN SERVICES INDICATED—Continued

Frequency	
462.9875	PS.
463.0125	PS.
463.0375	PS.
463.0625	PS.
463.0875	PS.
463.1125	PS.
463.1375	PS.
463.1625	PS.
463.1875	PS.
463.2125	IB.
463.2375	IB.
463.2625	IB.
463.2875	IB.
463.3125	IB.
463.3375	IB.
463.3625	IB.
463.3875	IB.
463.4125	IB
463.4375	IB
463.4625	IB
463.4875	IB
463.5125	IB
463.5375	IB
463.5625	IB
463.5875	IB
463.6125	IB
463.6375	IB.
463.6625	IB.
463.6875	IB.
463.7125	IB.
463.7375	IB.
463.7625	IB.
463.7875	IB.
463.8125	IB.
463.8375	IB.
463.8625	IB.
463.8875	IB.
463.9125	IB.
463.9375	IB.
463.9625	IB.
463.9875	IB.
464.0125	IB.
464.0375	IB.
464.0625	IB.
464.0875	IB.
464.1125	IB.
464.1375	IB.
464.1625	IB.
464.1875	IB.
464.2125	IB.
464.2375	IB.
464.2625	IB.
464.2875	IB.
464.3125	IB.
464.3375	IB.
464.3625	IB.
464.3875	IB.
464.4125	IB.
464.4375	IB.
464.4625	IB.
464.4875	IB.
464.5125	IB.
464.5375	IB.
464.5625	IB.
464.5875	IB.
464.6125	IB.
464.6375	IB.
464.6625	IB.
464.6875	IB.
464.7125	IB.
464.7375	IB.
464.7625	IB.
464.7875	IB.
464.8125	IB.
464.8375	IB.
464.8625	IB.
464.8875	IB.
464.9125	IB.
464.9375	IB.
464.9625	IB.
464.9875	IB.
465.0125	PP.
465.0375	PP.
465.0625	PP.
465.0875	PP.
465.1125	PP.
465.1375	PP.
465.1625	PP.
465.1875	PP.
465.2125	PP.
465.2375	PP.
465.2625	PP.
465.2875	PP.
465.3125	PP.
465.3375	PP.
465.3625	PP.
465.3875	PP.
465.4125	PP.
465.4375	PP.
465.4625	PP.
465.4875	PP.
465.5125	PF, PP, PS
465.5375	PF, PP, PS
465.5625	PF, PP, PS
465.5875	PF.
465.6125	PF.
465.6375	PF.
465.6625	IB.
465.6875	IB.
465.7125	IB.
465.7375	IB.
465.7625	IB.
465.7875	IB.
465.8125	IB.
465.8375	IB.
465.8625	IB.
465.8875	IB.
465.9125	IB.[1]
465.9375	IB.[1]
465.9625	IB.[1]
465.9875	IB.[1]
466.0125	IB.
466.0375	IB.
466.0625	IB.
466.0875	IB.
466.1125	IB.
466.1375	IB.
466.1625	IB.
466.1875	IB.
466.2125	IB.
466.2375	IB.
466.2625	IB.
466.2875	IB.
466.3125	IB.
466.3375	IB.
466.3625	IB.
466.3875	IB.
466.4125	IB.

ET CHANNELS AVAILABLE IN SERVICES INDICATED—Continued

Frequency	
	IB.
	IB.
	IB.
	IB.
	IB.
	IB.
	IB.
	IB.
	IB.
	IB.
	IB.
	IB.
	IB.
	IB.
	IB.
	IB.
	IB.
	IB.
	IB.
	IB.
	IB.
	IB
	IB.
	IB.
	IB.
	IB.
	IB.
	IB.
	IB.
	IB.
5	IB, IX.
5	IX.
5	IX.
5	IX.
5	IX.
5	IX.
5	IX.
5	IX.
5	IX.
5	IX.
5	IX.
5	IF, IP, IT, IW, IX.
5	IF, IP, IT, IW, IX
5	IF, IP, IT, IW, IX
5	Not available, adjacent to general mobile.
-467.725	(Not available—general mobile)
75	Not available, adjacent to general mobile.
25	IB.
75	IB.
25	IB.
75	IB.
25	IB.
75	IB.
25	IB.
75	PS.
25	PS.
75	PS.
25	PS.
75	PS.
25	PS.
75	PS.
25	PS.
75	PS.
25	PS.

OFFSET CHANNELS AVAILABLE IN SERVICES INDICATED—Continued

Frequency	
468.1875	PS.
468.2125	IB.
468.2375	IB.
468.2625	IB.
468.2875	IB.
468.3125	IB.
468.3375	IB.
468.3625	IB.
468.3875	IB.
468.4125	IB.
468.4375	IB.
468.4625	IB.
468.4875	IB.
468.5125	IB.
468.5375	IB.
468.5625	IB.
468.5875	IB.
468.6125	IB.
468.6375	IB.
468.6625	IB.
468.6875	IB.
468.7125	IB.
468.7375	IB.
468.7625	IB.
468.7875	IB.
468.8125	IB.
468.8375	IB.
468.8625	IB.
468.8875	IB.
468.9125	IB.
468.9375	IB.
468.9625	IB.
468.9875	IB.
469.0125	IB.
469.0375	IB.
469.0625	IB.
469.0875	IB.
469.1125	IB.
469.1375	IB.
469.1625	IB.
469.1875	IB.
469.2125	IB.
469.2375	IB.
469.2625	IB.
469.2875	IB.
469.3125	IB.
469.3375	IB.
469.3625	IB.
469.3875	IB.
469.4125	IB.
469.4375	IB.
469.4625	IB.
469.4875	IB.
469.5125	IB.
469.5375	IB.
469.5625	IB.
469.5875	IB.
469.6125	IB.
469.6375	IB.
469.6625	IB.
469.6875	IB.
469.7125	IB.
469.7375	IB.
469.7625	IB.
469.7875	IB.
469.8125	IB.
469.8375	IB.
469.8625	IB.
469.8875	IB.

OFFSET CHANNELS AVAILABLE IN SERVICES INDICATED—Continued

Frequency	
469.9125	[1]B.
469.9375	[1]B.
469.9625	[1]B.

---

[1] Listed Central Station Protection Services. Limitations: § 90.75(c)(27) and (41).

[46 FR 45956, Sept. 16, 1981, as amended at 47 FR 5227, Feb. 4, 1982; 47 FR 16789, Apr. 20, 1982; 48 FR 40181, Oct. 15, 1984; 50 FR 10232, Mar. 14, 1985; 50 FR 39680, Sept. 30, 1985; 50 FR 40976, Oct. 8, 1985; 52 FR 4501, Feb. 12, 1987; 52 FR 29856, Aug. 12, 1987]

§ 90.269 Use of frequencies for self-powered vehicle detectors.

(a) Frequencies bearing limitation (17) in the frequency table § 90.23(b) may be used for the operation of self-powered vehicle detectors by licensees of base/mobile stations in any of the Public Safety Radio Services in accordance with the following conditions:

(1) All stations are limited to 100 milliwatts carrier power and 20K00F7W, 20K00F7X, 20K00F8W, 20K00F8X, 20K00F9W or 20K00F9X emissions. The frequency deviation shall not exceed 5 kHz. No more than two 30 ms. pulses may be emitted for each vehicle sensed.

(2) The transmitters must be crystal controlled with a frequency tolerance of plus or minus .005% from −20° to plus 50° C. They must be type accepted.

(3) The total length of the transmission line plus antenna may not exceed one-half wavelength and must be integral with the unit.

(4) All operation shall be on a secondary, non-interference basis.

[48 FR 54982, Dec. 8, 1983, as amended at 54 FR 38681, Sept. 20, 1989]

§ 90.271 Narrowband operations.

(a) In all radio services except the Business Radio Service, frequencies removed by 2.5 or 7.5 kHz from regularly assignable frequencies in the 150-170 MHz band listed in the radio service's allocation table may be assigned to eligible users for narrowband operations in accordance with the following:

(1) Applications for narrowband erations must be accompanied by dence of frequency coordin (§ 90.175). In the case of frequen 7.5 kHz removed from FM chan the interference analysis should sider existing stations located wi 60 miles.

(2) Operations on frequencie moved by 2.5 kHz from a frequen listed in a radio service's alloca table shall be licensed as the class as that frequency and com with any limitations on that frequ cy.

(3) Operations on frequencie moved by 7.5 kHz from a frequen listed in a radio service's allocat table are reserved for base or mo operation.

(4) Frequencies 7.5 kHz remo from frequencies allocated to differ radio services shall be available both radio services.

(b) Frequencies removed by 2.5, or 12.5 kHz from regularly assign frequencies in the Business Ra Service 150 MHz band may be assig to eligible users in that service in cordance with the following:

(1) Meets the provisions of pa graphs (a)(1) and (2) of this section

(2) Frequencies 7.5 and 12.5 kHz moved from frequencies listed in t allocation table are reserved for ba or mobile operations.

(3) Channels located between fr quencies listed in the allocation tab bound by limitation (8) also mu comply with that limitation.

(4) The following frequencies ma be used for mobile or control stat operation. Output power is limited 25 watts peak envelope power. Ope ation must comply with the techni standards for narrowband operation

154.5025
154.5275
154.5525

(c) Assignable frequencies repres the center of the authorized ban width.

[50 FR 13606, Apr. 5, 1985, as amended at FR 29857, Aug. 12, 1987; 54 FR 39740, Se 28, 1989]

0.273 Availability and use of frequen- cies in the 421–430 MHz band.

The frequency bands 422.1875- 5.4875 MHz and 427.1875-429.9875 Hz are available for use in the De- it, Michigan and Cleveland, Ohio eas. The bands 423.8125-425.4875 Hz and 428.8125-429.9875 MHz are ailable for use in the Buffalo, New rk area. Sections 90.273 through 281 address the specific rules appli- ble to these bands. Use of these nds is also subject to the general hnical standards and application cedures contained in other sub- ts of part 90. The technical stand- s applicable in this band are the ne as those contained in subpart I part 90 for the 450–470 MHz band. vate land mobile use of these fre- encies is subject to accepting any in- ference from Federal Government diolocation operations.

a) The following tables list frequen- s available for assignment in the blic safety, business or industrial/ d transportation pools as indicated. the tables, the public safety pool is noted as "PS", the business pool as ", and the industrial/land transpor- ion pool as "I/LT." The frequencies .200 MHz through 424.975 MHz are red with frequencies 427.200 MHz ough 429.975 MHz, respectively. ly the lower half of each frequency r, available for base station oper- on, is listed in the tables. Corre- nding mobile and control station quencies are 5 MHz higher than the e station frequency. The frequen- s 425.000 through 425.475 are un- red and are available for either gle frequency dispatch or paging erations.

ABLE 1—CHANNELS AVAILABLE IN DETROIT AND CLEVELAND AREAS ONLY

Frequency (MHz)	Pool in which assigned
d channels:	
2.200	I/LT
2.225	I/LT
2.250	I/LT
2.275	I/LT
2.300	I/LT
2.325	I/LT
2.350	I/LT
2.375	I/LT
2.400	I/LT

TABLE 1—CHANNELS AVAILABLE IN DETROIT AND CLEVELAND AREAS ONLY—Continued

Frequency (MHz)	Pool in which assigned
422.425	I/LT
422.450	I/LT
422.475	I/LT
422.500	I/LT
422.525	I/LT
422.550	I/LT
422.575	I/LT
422.600	B
422.625	B
422.650	B
422.675	B
422.700	B
422.725	B
422.750	B
422.775	B
422.800	B
422.825	B
422.850	B
422.875	B
422.900	B
422.925	B
422.950	B
422.975	B
423.000	PS
423.025	PS
423.050	PS
423.075	PS
423.100	PS
423.125	PS
423.150	PS
423.175	PS
423.200	PS
423.225	PS
423.250	PS
423.275	PS
423.300	PS
423.325	PS
423.350	PS
423.375	PS
423.400	PS
423.425	PS
423.450	PS
423.475	PS
423.500	PS
423.525	PS
423.550	PS
423.575	PS
423.600	PS
423.625	PS
423.650	PS
423.675	PS
423.700	PS
423.725	PS
423.750	PS
423.775	PS
423.800	PS

TABLE 2—CHANNELS AVAILABLE IN BUFFALO, DETROIT AND CLEVELAND AREAS

Frequency (MHz)	Pool in which assigned
Paired channels:	
423.825	PS
423.850	PS

TABLE 2—CHANNELS AVAILABLE IN BUFFALO, DETROIT AND CLEVELAND AREAS—Continued

Frequency (MHz)	Pool in which assigned
423.875	PS
423.900	PS
423.925	PS
423.950	PS
423.975	PS
424.000	PS
424.025	PS
424.050	PS
424.075	PS
424.100	PS
424.125	PS
424.150	PS
424.175	PS
424.200	PS
424.225	PS
424.250	PS
424.275	PS
424.300	PS
424.325	PS
424.350	PS
424.375	PS
424.400	I/LT
424.425	I/LT
424.450	I/LT
424.475	I/LT
424.500	I/LT
424.525	I/LT
424.550	I/LT
424.575	I/LT
424.600	I/LT
424.625	I/LT
424.650	I/LT
424.675	I/LT
424.700	B
424.725	B
424.750	B
424.775	B
424.800	B
424.825	B
424.850	B
424.875	B
424.900	B
424.925	B
424.950	B
424.975	B
Single channels:	
425.000	B
425.025	B
425.050	B
425.075	B
425.100	B
425.125	I/LT
425.150	I/LT
425.175	I/LT
425.200	I/LT
425.225	I/LT
425.250	PS
425.275	PS
425.300	PS
425.325	PS
425.350	PS
425.375	PS
425.400	PS
425.425	PS
425.450	PS
425.475	PS

(b) Channels in the publ pool are available for assig eligibles in the Police, Fire, L ernment, Highway Maintena estry Conservation, and Spec gency Radio Services. Chann industrial/land transportati are available for assignment bles in the Power, Petroleun Products, Motion Picture, Rel Special Industrial, Manuf Telephone Maintenance, Mot er, Railroad, Taxicab, and Au Emergency Radio Services. (in the business pool are ava eligibles in the Business Radio

(c) Base or control stations located within 30 miles of th of Buffalo or 50 miles of the c Detroit. In Cleveland, base or stations will be allowed at l north of line A that are w miles of the city center. In s low power (2 watts or less) b tions may locate within 50 mil center of Buffalo. The follow ordinates shall be used for the of these areas:

Buffalo, NY	42°52'52" North latitude 78°52'21" West longitude
Cleveland, OH	41°29'51" North latitude 81°41'50" West longitude
Detroit, MI	42°19'48" North latitude 83°02'57" West longitude

(d) Mobile operation shall fined to within 50 miles of the of Detroit, Cleveland, or Buffal

[52 FR 6156, Mar. 2, 1987, as amen FR 38681, Sept. 20, 1989]

§ 90.275 Selection and assignmen quencies in the 421-430 MHz b

Applicants must specify the f cies on which the proposed syst operate pursuant to a recom tion by the frequency coordina ignated for the pool in which quested frequency is assigned.

[52 FR 6157, Mar. 2, 1987]

§ 90.277 Interpool sharing of 421-4 frequencies.

In the business pool and the trial/land transportation pool, cants in one pool may have access to channels in the other pool after March 30, 1988 under the following conditions:

(a) There are no satisfactory channels in the applicant's own pool, as determined by the frequency coordinator for that pool; and

(b) Channels in the pool from which the applicant wishes to obtain a channel must be available in the proposed area of operation, as determined by the frequency coordinator for that pool.

[52 FR 6157, Mar. 2, 1987]

§ 90.279 Power limitations applicable to the 421-430 MHz band.

(a) Base station authorizations in the 421-430 MHz band will be subject to Effective Radiated Power (ERP) and Effective Antenna Height (EAH) limitations as shown in the table below. ERP is defined as the product of the power supplied to the antenna and its gain relative to a half-wave dipole in a given direction. EAH is calculated by subtracting the Assumed Average Terrain Elevation (AATE) as listed in Table 7 of § 90.619 from the antenna height above mean sea level.

LIMITS OF EFFECTIVE RADIATED POWER (ERP) CORRESPONDING TO EFFECTIVE ANTENNA HEIGHTS (EAH) OF BASE STATIONS IN THE 421-430 MHZ BAND

Effective antenna height (EAH) (feet)	Maximum effective radiated power (ERP) (watts)
0-500	250
501-1000	150
1001-1500	75
1501-2000	40
2001-2500	20
2501-3000	15
3001-4000	10
Above 4000	5

(b) The maximum transmitter power output that will be authorized for control stations is 20 watts.

[52 FR 6157, Mar. 2, 1987]

§ 90.281 Restrictions on operational fixed stations in the 421-430 MHz band.

(a) Except for control stations, operational fixed facilities will not be authorized in the 421-430 MHz band. This does not preclude secondary fixed tone signaling and alarm operations authorized in § 90.235.

(b) Control stations associated with one or more mobile relay stations will be authorized only on the assigned frequency of the associated mobile station. Use of a mobile service frequency by a control station of a mobile relay system is subject to the condition that harmful interference shall not be caused to stations of licensees authorized to use the frequency for mobile service communications.

[52 FR 6158, Mar. 2, 1987, as amended at 54 FR 38681, Sept. 20, 1989]

Subpart L—Authorization in the Band 470-512 MHz (UHF-TV Sharing)

§ 90.301 Scope.

This subpart governs the authorization and use of frequencies by land mobile stations in the band 470-512 MHz on a geographically shared basis with Television Broadcast stations. Under this special sharing plan, different radio services are allocated different specific frequencies in this band depending upon the geographic urban area involved as fully detailed in the following rule sections.

§ 90.303 Availability of frequencies.

(a) Frequencies in the band 470-512 MHz are available for assignment in the urbanized areas listed below. The specific frequencies available to each radio service are listed in § 90.311.

Frequency Availability for Land Mobile Use

Urbanized area	Geographic center		Channel	Frequen (megah
	North latitute	West longitude		
Boston, MA	42°21'24"	71°03'25"	14	470-
			16	482-
Chicago, IL[1]	41°52'28"	87°38'22"	14	470-
			15	476-
Cleveland, OH[2]	41°29'51"	81°41'50"	14	470-
			15	476-
Dallas/Fort Worth, TX	32°47'09"	96°47'37"	16	482-
Detroit, MI[3]	42°19'48"	83°02'57"	15	476-
			16	482-
Houston, TX	29°45'26"	95°21'37"	17	488-
Los Angeles, CA[4]	34°03'15"	118°14'28"	14	470-
			20	506-
Miami, FL	25°46'37"	80°11'32"	14	470-
New York/N.E. NJ	40°45'06"	73°59'39"	14	470-
			15	476-
Philadelphia, PA	39°56'58"	75°09'21"	19	500-
			20	506-
Pittsburgh, PA	40°26'19"	80°00'00"	14	470-
			18	494-
San Francisco/Oakland, CA	37°46'39"	122°24'40"	16	482-
			17	488-
Wash., DC/MD/VA	38°53'51"	77°00'33"	17	488-
			18	494-

[1] In the Chicago, IL, urbanized area, channel 15 frequencies may be used for paging operations in addition to low po base/mobile usages, where applicable protection requirements for ultrahigh frequency television stations are met.

[2] Channels 14 and 15 are not available in Cleveland, OH, until further order from the Commission.

[3] Channels 15 and 16 are not available in Detroit, MI, until further order from the Commission.

[4] Channel 16 is available in Los Angeles for use by public safety users.

[43 FR 54791, Nov. 22, 1978, 44 FR 32220, June 5, 1979, as amended at 50 FR 39681, Sept. 1985; 50 FR 40976, Oct. 8, 1985; 51 FR 4361, Feb. 4, 1986; 52 FR 29856, Aug. 12, 1987]

§ 90.305 Location of stations.

(a) The transmitter site(s) for base station(s), including mobile relay stations, shall be located not more than 80 km. (50 mi.) from the geographic center of the urbanized area listed in § 90.303.

(b) Mobile units shall be operated within 48 km. (30 mi.) of their associated base station or stations. Such units may not be operated aboard aircraft in flight except as provided for in § 90.315(i).

(c) Control stations must be located within the area of operation of the mobile units.

(d) Base and control stations shall be located a minimum of 1.6 km. (1 mi.) from local television stations operating on UHF TV channels separated by 2, 3, 4, 5, 7, and 8 TV channels from the television channel in which the base station will operate.

§ 90.307 Protection criteria.

The tables and figures listed i § 90.309 shall be used to determine th proper power (ERP) and antenn height of the proposed land mobil base station and the proper powe (ERP) for the associated control sta tion (control station antenna heigh shall not exceed 31 m. (100 ft.) abov average terrain (AAT)).

(a) Base stations operating on th frequencies available for land mobil use in any listed urbanized area an having an antenna height (AAT) les than 152 m. (500 ft.) shall afford pro tection to co-channel and adjacen channel television stations in accord ance with the values set out in Table A and E of this subpart, except fo Channel 15 in New York, NY, an Cleveland, OH, and Channel 16 in Detroit, MI, where protection will be in accordance with the values set forth in Tables B and E.

(b) For base stations having antenn heights between 152–914 meters (500-

3,000 ft.) above average terrain, the effective radiated power must be reduced below 1 kilowatt in accordance with the values shown in the power reduction graph in Figure A, except for Channel 15 in New York, NY, and Cleveland, OH, and Channel 16 in Detroit, MI, where the effective radiated power must be reduced in accordance with Figure B. For heights of more than 152 m. (500 ft.) above average terrain, the distance to the radio path horizon will be calculated assuming smooth earth. If the distance so determined equals or exceeds the distance to the Grade B contour of a co-channel TV station, (Grade B contour defined in § 73.683(a)) an authorization will not be granted unless it can be shown that actual terrain considerations are such as to provide the desired protection at the Grade B contour, or that the effective radiated power will be further reduced so that, assuming free space attenuation, the desired protection at the Grade B contour will be achieved.

(c) Mobile units and control stations operating on the frequencies available for land mobile use in any given urbanized area shall afford protection to co-channel and adjacent channel television stations in accordance with the values set forth in Table C and paragraph (d) of this section except for Channel 15 in New York, NY, and Cleveland, OH, and Channel 16 in Detroit, MI, where protection will be in accordance with the values set forth in Table D and paragraph (d) of this section.

(d) The minimum distance between a land mobile base station which has associated mobile units and a protected adjacent channel television station is 90 miles (145 km).

(e) The television stations to be protected (co-channel, adjacent channel, IM, and IF) in any given urbanized area, in accordance with the provisions of paragraphs (a), (b), (c), and (d) of this section, are identified in the commission's publication "TV stations to be considered in the preparation of Applications for Land Mobile Facilities in the Band 470–512 MHz." The publication is available at the offices of the Federal Communications Commission at Washington, DC or upon the request of interested persons.

[43 FR 54791, Nov. 22, 1978, as amended at 49 FR 36107, Sept. 14, 1984]

§ 90.309 Tables and figures.

(a) *Directions for using the tables.* (1) Using the method specified in § 73.611 or charts or maps of suitable scale, determine the distances (i) between the proposed land mobile base station and the protected cochannel television station and (ii) between the proposed land mobile base station and the protected adjacent channel television station. If the exact mileage does not appear in Table A for protected cochannel television stations (or Table B for Channel 15 in New York and Cleveland and channel 16 in Detroit) or Table E for protected adjacent channel television stations, the next lower mileage separation figure is to be used.

(2) Entering the proper table at the mileage figure found in paragraph (a)(1) of this section, find opposite, a selection of powers that may be used for antenna heights ranging from 50 (15 m) to 500 (152 m) feet (AAT). If the exact antenna height proposed for the land mobile base station does not appear in the proper table, use the power figure beneath the next greater antenna height.

(3) The lowest power found using the tables mentioned in paragraphs (a)(1) and (2) of this section is the maximum power that may be employed by the proposed land mobile base station.

(4) In determining the average elevation of the terrain, the elevations between 2 and 10 miles (3 and 16 kilometers) from the antenna site are employed. Profile graphs shall be drawn for a minimum of eight radials beginning at the antenna site and extending 10 miles (16 kilometers). The radials should be drawn starting with true north. At least one radial should be constructed in the direction of the nearest co-channel and adjacent channel UHF television stations. The profile graph for each radial shall be plotted by contour intervals of from 40 to 100 feet (12 to 30 meters) and, where the data permits, at least 50 points of

elevation (generally uniformly spaced) should be used for each radial. For very rugged terrain 200 to 400 feet (61 to 400 meters) contour intervals may be used. Where the terrain is uniform or gently sloping, the smallest contour interval indicated on the topographic chart may be used. The average elevation of the 8-mile distance between 2 and 10 miles (3 and 10 kilometers) from the antenna site should be determined from the profile graph for each radial. This may be obtained by averaging a large number of equally spaced points, by using a planimeter, or by obtaining the median elevation (that exceeded by 50 percent of the distance) in sectors and averaging those values. In the preparation of the profile graphs, the elevation or contour intervals may be taken from U.S. Geological Survey Topographic Maps, U.S. Army Corps of Engineers or Tennessee Valley Authority Maps with a scale of 1:250,0 larger (such as 1:24,000) shall be If such maps are not published f area in question, the next best graphic information should be us lieu of maps, the average terrain tion may be computer gene except in cases of dispute, using tions from a 30 second, point or topographic data file such as available from the U.S. Geol Survey's National Cartographic mation Center or the National O ic and Atmospheric Administra National Geophysical Data Cente

(5) Applicants for base statio the Miami, FL, urbanized area m lieu of calculating the height of age terrain, use 10 feet (3 m) as t erage terrain height.

TABLE A—*Base Station—Cochannel Frequencies (50 dB Protection) Maximum Effecti Radiated Power (ERP)* [1]

	Antenna height in feet (AAT)								
	50 (15 m)	100 (30 m)	150 (45 m)	200 (61 m)	250 (76 m)	300 (91 m)	350 (106 m)	400 (122 m)	450 (137 m)
Distance in miles: [2]									
162 (260 km)	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
160 (257 km)	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
155 (249 km)	1,000	1,000	1,000	1,000	1,000	875	775	700	625
150 (241 km)	1,000	1,000	950	775	725	625	550	500	450
145 (233 km)	850	750	650	575	500	440	400	350	320
140 (225 km)	600	575	475	400	350	300	275	250	230
135 (217 km)	450	400	335	300	255	240	200	185	165
130 (209 km)	350	300	245	200	185	160	145	125	120
125 (201 km)	225	200	170	150	125	110	100	90	80
120 (193 km)	175	150	125	105	90	80	70	60	55

[1] The effective radiated power (ERP) and antenna height above average terrain (AAT) shall not exceed the values this table.

[2] At this distance from transmitter site of protected UHF television station.

TABLE B—*Base Station—Cochannel Frequencies (40 dB Protection) Maximum Effecti Radiation Power (ERP)* [1]

	Antenna height in feet (AAT)								
	50 (15 m)	100 (30 m)	150 (45 m)	200 (61 m)	250 (76 m)	300 (91 m)	350 (106 m)	400 (122 m)	450 (137 m)
Distance in miles: [2]									
130 (209 km)	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
125 (201 km)	1,000	1,000	1,000	1,000	1,000	1,000	1,000	850	750
120 (193 km)	1,000	1,000	1,000	1,000	900	750	675	600	550
115 (185 km)	1,000	1,000	800	725	600	525	475	425	375
110 (177 km)	850	700	600	500	425	375	325	300	275
105 (169 km)	600	475	400	325	275	250	225	200	175
100 (161 km)	400	325	275	225	175	150	140	125	110
95 (153 km)	275	225	175	125	110	95	80	70	60

TABLE B—*Base Station—Cochannel Frequencies (40 dB Protection) Maximum Effective Radiation Power (ERP)*[1]—Continued

	Antenna height in feet (AAT)									
	50 (15 m)	100 (30 m)	150 (45 m)	200 (61 m)	250 (76 m)	300 (91 m)	350 (106 m)	400 (122 m)	450 (137 m)	500 (152 m)
90 (145 km)	175	125	100	75	50	....	....	....	....	....

[1] The effective radiated power (ERP) and antenna height above average terrain (AAT) shall not exceed the values given in this table.

[2] At this distance from transmitter site of protected UHF television station.

TABLE C—*Mobile and Control Station—Distance Between Associated Base Station and Protected Cochannel TV Station*

[50 dB protection]

	Distance	
	Miles	Kilometers
Effective radiated power (watts) of mobile unit and control station:		
200	155	249
150	151	243
100	145	233
50	135	217
25	125	201
10	117	188
5	112	180

TABLE D—*Mobile and Control Station—Distance in Miles Between Associated Land Mobile Base Station and Protected Cochannel TV Station*

[40 dB protection]

	Distance	
	Miles	Kilometers
Effective radiated power (watts) of mobile unit and control station:		
200	130	209
150	125	201
100	120	193
50	115	185
25	110	177
10	105	169
5	100	161

TABLE E—*Base Station Adjacent Channel Frequencies Maximum Effective Radiated Power (ERP)*[1]

	Antenna height in feet (AAT)									
	50 (15 m)	100 (30 m)	150 (45 m)	200 (61 m)	250 (76 m)	300 (91 m)	350 (106 m)	400 (122 m)	450 (137 m)	500 (152 m)
Distance in miles:[2][3]										
67 (108 km)	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
66 (106 km)	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	750
65 (104 km)	1,000	1,000	1,000	1,000	1,000	1,000	1,000	825	650	600
64 (103 km)	1,000	1,000	1,000	1,000	1,000	1,000	775	625	500	400
63 (101 km)	1,000	1,000	1,000	1,000	1,000	650	450	325	325	225
62 (99 km)	1,000	1,000	1,000	1,000	525	375	250	200	150	125
61 (98 km)	1,000	1,000	700	450	250	200	125	100	75	50
60 (96 km)	1,000	1,000	425	225	125	100	75	50	....	....

[1] The effective radiated power (ERP) and antenna height above average terrain (AAT) shall not exceed the values given in this table.

[2] At this distance from transmitter site of protected UHF television station.

[3] The minimum distance is 90 miles (145 km) where there are mobile units associated with the base station. See § 90.307(d).

TABLE "F"—*Decibel Reduction/Power Equivalents*

dB reduction below 1 kW	ERP permitted (figures rounded)
1	795
2	630
3	500
4	400
5	315
6	250
7	200
8	160
9	125
10	100
11	80
12	65
13	50
14	40
15	30
16	25
17	20
18	15
19	12
20	10
21	8
22	6
23	5
24	4
25	3
26	2.5
27	2
28	1.5
29	1.25
30	1

(b) *Directions for Using t*

(1) Determine antenna he average terrain. (Acco § 90.309(a)(4).)

(2) Locate this value on th height axis.

(3) Determine the sepa tween the LM antenna sit nearest protected co-chann tion. (According to § 73.611.)

(4) Draw a vertical line t the LM/TV separation cu distance determined in ste For distances not shown in use linear interpolation.

(5) From the intersection o TV separation curve draw a line to the power reduction s

(6) The power reduction in mines the reduction below must be achieved.

(7) See Table F for equivalents.

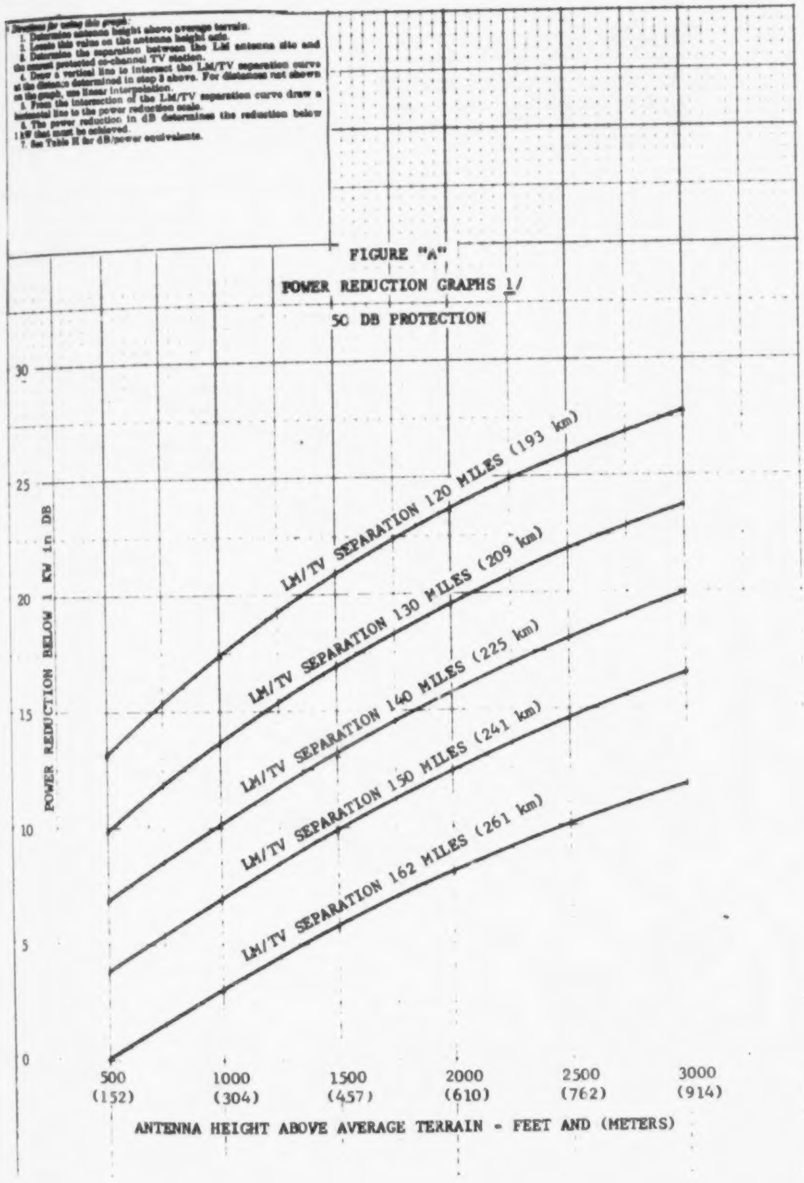


FIGURE "A"

POWER REDUCTION GRAPHS 1/

50 DB PROTECTION

1/ *Directions for using this graph:*

1. Determine antenna height above average terrain.
2. Locate this value on the antenna height axis.
3. Determine the separation between the LM antenna site and the nearest protected co-channel TV station.
4. Draw a vertical line to intersect the LM/TV separation curve at the distance determined in step 3 above. For distances not shown on the graph, use linear interpolation.
5. From the intersection of the LM/TV separation curve draw a horizontal line to the power reduction scale.
6. The power reduction in dB determines the reduction below 1 kW that must be achieved.
7. See Table II for dB/power equivalents.

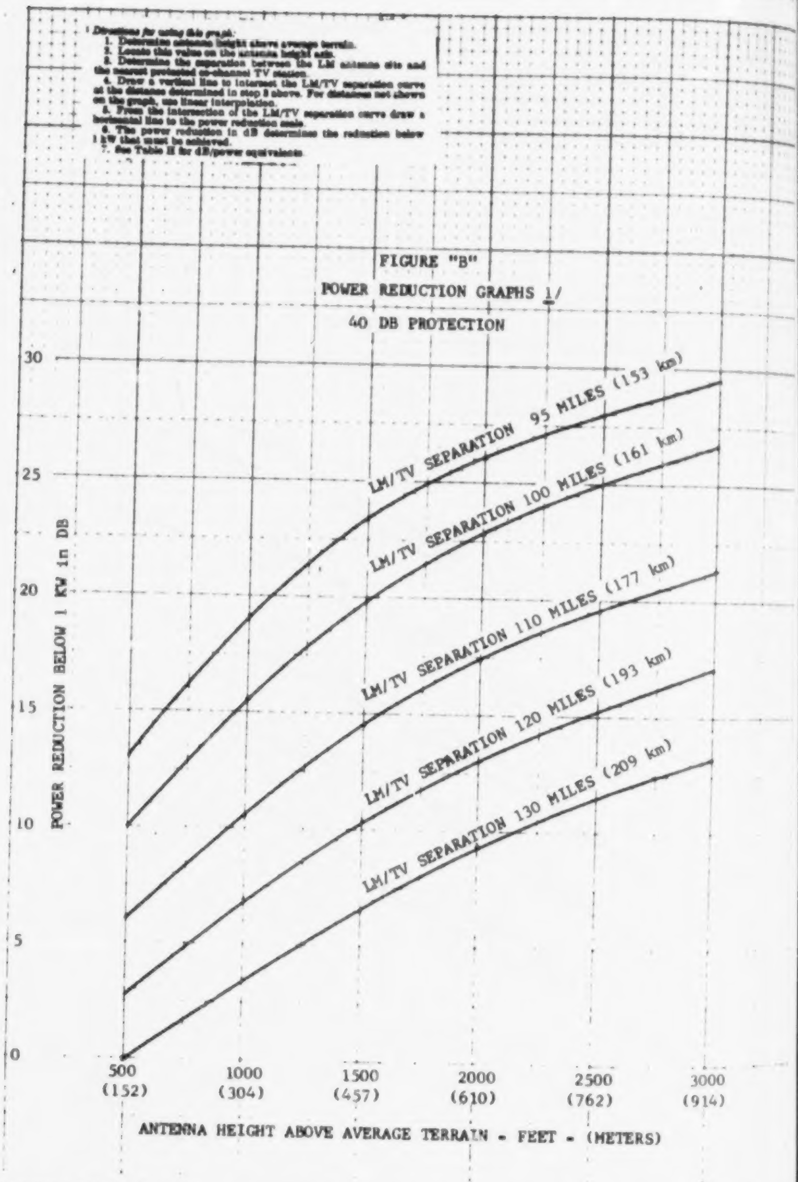


FIGURE "B"

POWER REDUCTION GRAPHS 1/

40 DB PROTECTION

[1] *Directions for using this graph:*

1. Determine antenna height above average terrain.
2. Locate this value on the antenna height axis.
3. Determine the separation between the LM antenna site and the nearest protected co-channel TV station.
4. Draw a vertical line to intersect the LM/TV separation curve at the distance determined in step 3 above. For distances not shown on the graph, use linear interpolation.
5. From the intersection of the LM/TV separation curve draw a horizontal line to the power reduction scale.
6. The power reduction in dB determines the reduction below 1 kW that must be achieved.
7. See Table II for dB/power equivalents.

(Section 0.231(d) of the Commission's Rules and secs. 4(i) and 303 of the Communications Act, as amended)

[43 FR 54791, Nov. 22, 1978, as amended at 49 FR 36107, Sept. 14, 1984; 49 FR 49837, Dec. 17, 1984]

§ 90.311 Frequencies.

(a) Except as provided for in § 90.315, the following frequencies in the band 470-512 MHz may be assigned to eligibles in the services as indicated below. The first and last assignable frequencies are shown. Assignable frequencies occur in increments of 25 kHz. The separation between base and mobile transmit frequencies is 3 MHz for two frequency operations.

Frequencies Assigned in Service Pools

Urbanized Area. (Channel assignment)	Public Safety Pool		Industrial Pools						Petroleum, Forest Products, and Manufacturers Radio Service		Land Transportation Pools				General Access Pool	
	Fire, Police, Local Government, Highway Maintenance and Forestry Conservation Radio Service		Power and Telephone Maintenance Radio Service		Special Industrial Radio Service		Business Radio Service				Railroad, motor carrier, and Automobile Emergency Radio Service		Taxicab Radio Service			
	Base and Mobile	Mobile	Base and Mobile	Mobile	Base and Mobile	Mobile	Base and Mobile	Mobile	Base and Mobile	Mobile	Base and Mobile	Mobile	Base and Mobile	Mobile	Base and Mobile	Mobile
Boston Ch. 14	470.3125 to 471.1375	473.3125 to 474.1375	471.3125 to 471.3985	474.3125 to 474.3875	471.4625 and 471.4985	474.4625 and 474.4875	471.8125 to 472.0625 and 472.1125 to 472.2125 and 472.2625	474.4625 to 475.0625 and 475.1125 to 475.2125 and 475.2625	None	None	472.4625 to 472.5375 and 472.5875 to 472.6875 and 472.7375 472.7875	475.4625 to 475.5375 and 475.5875 to 475.6875 and 475.7375 475.7875	472.3625 to 472.4375	475.3625 to 475.4375	470.2125 to 472.9875	673.3125 to 475.9875
Ch. 16	482.3125 to 483.1375	485.3125 to 486.1375	None	None	483.4875 to 484.3375	486.4875 to 487.3375	None	None	None	None	None	None	None	None	482.3125 to 484.9875	485.3125 to 487.9875
Chicago Ch. 14	470.3125 to 471.1375	473.3125 to 474.1375	None	None	471.4375 to 471.6375	474.4375 to 474.6375	471.8125 to 472.3375 and 472.6375 to 472.7875 and 472.9125 472.9625 472.9875	474.8125 to 475.3375 and 475.6375 to 475.7875 and 475.9125 475.9625 475.9875	472.8125	475.8125	472.4625 to 472.6125 and 472.9375	475.4625 to 475.6125 and 475.9375	None	None	470.3125 to 472.9875	473.3125 to 475.9875
Ch. 15	None	None	None	None	None	None	None	None	None	None	None	None	None	None	476.3125	479.3125

															478.9875	481.9875
Cleveland Ch. 14	None	None	None	None	None	None	None	None	None	None	None	None	None	None	470.3125 to 472.9875	473.3125 to 481.9875
Ch. 15	None	None	None	None	None	None	None	None	None	None	None	None	None	None	476.3125 to 478.9875	479.3125 to 475.9875
Detroit Ch. 15	None	None	None	None	None	None	None	None	None	None	None	None	None	None	476.3125 to 478.9875	479.3125 to 481.9875
Ch. 16	None	None	None	None	None	None	None	None	None	None	None	None	None	None	482.3125 to 484.9875	485.3125 to 487.9875
Los Angeles Ch. 14	470.0625 to 471.1375 and 506.1375 to 506.2875	473.0625 to 474.1375 and 509.1375 to 509.2875	473.3125 and 471.4125	474.3125 and 474.4125	471.4375 to 471.6375	474.4375 to 474.6375	471.1625 to 471.2875 and 471.6625 to 472.4375	476.1625 to 474.2875 and 474.6625 to 475.4375	472.8375 and 472.8875	475.8375 and 475.8875	472.4625 to 472.7875	475.4625 to 475.7875	472.9875	475.9875	470.3125 to 472.9875	473.3125 to 475.9875
Ch. 16	482.0125 to 484.9875	485.0125 to 487.9875														
Ch. 20	506.3125 to 507.2625	509.3125 to 510.2625	507.3125 and 507.4125	510.3125 and 510.4125	507.4375 to 507.6375	510.4375 to 510.6375	507.6625 to 508.4375 and 507.2875	510.6625 to 511.4375 and 510.2875	508.8125 and 508.8875	511.8125 and 511.8875	506.4625 to 508.7875	511.4625 to 511.7875	508.9125	511.9125	506.3125 to 508.9875	509.3125 to 511.9875
New York Ch. 14	470.3125	473.3125	472.9625	475.9625	471.4375	474.4375	471.6625	474.6625	None	None	472.4625	511.4625	472.3625	475.3625	470.3125	473.3125

Frequencies Assigned in Service Pools—Continued

Urbanized Area. (Channel assignment)	Public Safety Pool		Industrial Pools						Petroleum, Forest Products, and Manufacturers Radio Service		Land Transportation Pools				General Access Pool	
	Fire, Police, Local Government, Highway Maintenance and Forestry Conservation Radio Service		Power and Telephone Maintenance Radio Service		Special Industrial Radio Service		Business Radio Service				Railroad, motor carrier, and Automobile Emergency Radio Service		Taxicab Radio Service			
	Base and Mobile	Mobile	Base and Mobile	Mobile	Base and Mobile	Mobile	Base and Mobile	Mobile	Base and Mobile	Mobile	Base and Mobile	Mobile	Base and Mobile	Mobile	Base and Mobile	Mobile
	to 471.4125	to 474.4125	and 472.9875	and 481.9875	to 471.6375	to 474.6375	to 472.3375 and 472.7625 to 472.8875	to 475.3375 and 475.7625 to 475.8875			to 472.6125	to 475.6125	472.4375 and 472.8375 to 472.8625 472.7375 472.6875	to 475.4375 and 475.6375 to 475.8625 475.7375 475.6875	to 472.9875	to 475.9875
Ch. 15	476.3125 to 477.4125	479.3125 to 480.4125	478.9625 and 478.9875	481.9625 and 481.9875	477.4375 to 477.6375	480.4375 to 480.6375	477.6625 to 478.3375 and 478.7625 to 478.8875	480.6625 to 481.3375 and 481.7625 to 481.8875	None	None	478.5125 to 478.4875 and 478.6875	481.5125 to 481.4875 and 481.6875	478.3625 478.8625	481.5125 481.6625	476.3125 to 478.9875	479.3125 to 481.9875
Philadelphia Ch. 19	500.3125	503.3125	None	None	501.4375	504.4375	501.8125	504.8125	None	None	502.4625	505.4625	None	None	500.3125	503.3125

	to 500.4375 and 500.5625 and 500.6625 and 500.6875 500.7375 and 500.7875 to 500.9125 500.9625 500.9875 and 501.0625 and 501.1125 501.1375	to 503.4375 and 503.5625 and 503.6625 and 503.6875 503.7375 and 503.7875 to 503.9125 503.9625 503.9875 and 504.0625 and 504.1125 504.1375			to 501.4875 and 501.5375 501.6125	to 504.4875 and 504.5375 504.6125	to 502.3375	to 505.3375			to 502.7875	to 505.7875			to 502.9875	to 505.9875
Ch. 20	None	None	None	None	None	None	507.8125 to 508.1875 and 508.2375 to 508.3375	510.8125 to 511.1875 and 511.2375 to 511.3375	None	None	None	None	None	None	506.3125 to 508.9875	509.3125 to 511.9875
Pittsburgh Ch. 14	None	None	None	None	None	None	471.8125	474.8125	None	None	None	None	None	None	470.3125 to 472.9875	473.3125 to 475.9875
Ch. 18	None	None	None	None	None	None	None	None	None	None	None	None	None	None	488.3125	491.3125

Frequencies Assigned in Service Pools—Continued

Urbanized Area. (Channel assignment)	Public Safety Pool		Industrial Pools						Petroleum, Forest Products, and Manufacturers Radio Service		Land Transportation Pools				General Access Pool	
	Fire, Police, Local Government, Highway Maintenance and Forestry Conservation Radio Service		Power and Telephone Maintenance Radio Service		Special Industrial Radio Service		Business Radio Service				Railroad, motor carrier, and Automobile Emergency Radio Service		Taxicab Radio Service			
	Base and Mobile	Mobile	Base and Mobile	Mobile	Base and Mobile	Mobile	Base and Mobile	Mobile	Base and Mobile	Mobile	Base and Mobile	Mobile	Base and Mobile	Mobile	Base and Mobile	Mobile
															to 490.9875	to 493.9875
San Francisco	482.3125 482.3375 482.3875 to 482.4875 482.5375 482.5625 482.6125 482.6875 to 482.7625 482.8125 to 482.9125 482.9625 483.0125	485.3125 485.3375 485.3875 to 485.4875 485.5375 485.5625 485.6125 485.6875 to 485.7625 485.8125 to 485.9125 485.9625 486.0125	None	None	483.4375 to 483.6375	486.4375 to 486.6375	483.8125 to 844.3375	486.8125 to 486.3375	None	None	484.4625 to 484.7875	487.4625 to 487.7875	None	None	482.3125 to 484.9875	485.3125 to 487.9875
Ch. 17	488.3625	491.3625	None	None	489.4375	492.4375	488.8125	491.8125	490.8375	493.8375	490.4625	493.4625	None	None	488.3125	491.3125

	to 488.4625 488.5125 488.5625 488.6125 to 488.6875 488.7375 488.7625 488.8375 488.8625 488.9125 488.9625 489.0125 to 489.0625 489.1125 489.1375	to 491.4625 491.5125 491.5625 491.6125 to 491.6875 491.7375 491.7625 491.8375 491.8625 491.9125 491.9625 492.0125 to 492.0625 492.1125 492.3125			to 489.6375	to 492.6375	to 489.3375	to 492.3375	490.8625 490.9125 490.9625	493.8625 493.9125 493.9625	to 490.5625 490.6125 to 490.6625 490.7125 490.7625	to 493.5625 493.6125 to 493.6625 493.7125 493.7625			to 490.9875	to 493.9875
Washington, DC Ch. 17	488.3125	491.3125	None	None	None	None	None	None	None	None	None	None	None	None	488.3125 to 490.9875	491.3125 to 493.9875
Ch. 18	494.3125 to 495.4125	497.3125 to 498.4125	None		495.5875 to 495.6375	498.5875 to 498.6375	495.6875 to 496.2125	498.6875 to 499.2125	None None		496.4625 to 496.6125	499.4625 to 499.6125	496.3625 and 496.3875	499.3625 and 499.3875	494.3125 to 496.9875	497.3125 to 499.9875

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(1) Channel availability in the General Access Pool in any of the urbanized areas referred to in the table depends upon whether that channel is presently assigned to users in one of the service pools. If unassigned, or should a channel subsequently become unassigned, it will be treated as available in the General Access Pool.

(2) Frequencies in the General Access Pool will be made available to applicants after all channels presently assigned are substantially loaded in accordance with the standards set out in § 90.313 of this part. Channels from the General Access Pool will be assigned starting with the lowest frequency available at the time and progress towards the high end of the General Access Pool. Normally, each channel should be substantially filled before the next one will be assigned.

(b) Miami, FL, Dallas, TX, and Houston, TX urbanized areas.

Channel 14 (Miami)	Channel 16 (Dallas)	Channel 17 (Houston)
470.3125 to 475.9875	482.3125 to 487.9875.	488.3125 to 493.9875.

(1) Base station frequencies for the Public Safety Radio Service will be assigned serially beginning at 470.7125 MHz for Miami, 482.7125 MHz for Dallas, and at 488.7125 MHz for Houston and progressing a channel at a time upward and downward from those points.

(2) Base station frequencies for the Petroleum, Forest Products, and Manufacturers Radio Services will be assigned serially beginning at 470.3125 MHz for Miami, 482.3125 MHz for Dallas, and 488.3125 MHz for Houston and progressing upward from those points a channel at a time.

(3) Base station frequencies for the Special Industrial Radio Service will be assigned serially beginning at 471.4375 MHz for Miami, 483.4375 MHz for Dallas, and 489.4375 MHz for Houston and progressing a channel at a time upward and downward from those points.

(4) Base station frequencies for the Business Radio Service will be assigned serially beginning at 470.3125, 471,2625, and 472.3625 MHz for Miami, 483.6125 and 483.1375 MHz for Miami, 483.6125 and 483.1375 MHz for Dallas and 489.6625 MHz and 490.3625 MHz for Houston and progressing, a channel at a time from those points. Mobile station frequencies are 3 MHz higher than the corresponding base station frequencies. Normally, each channel shall be substantially filled before the next channel is assigned.

(5) Base station frequencies for the Power and Telephone Maintenance Radio Services will be assigned serially beginning at 471.2625 MHz for Miami, 483.2625 MHz for Dallas, and 489.2625 MHz for Houston and progressing a channel at a time upward and downward from those points.

(6) Base station frequencies for the Railroad, Motor Carrier, and Automobile Emergency Radio Services will be assigned serially beginning at 471.7825 MHz for Miami, 483.7825 MHz for Dallas, and 489.7825 MHz for Houston and progressing upward and downward from those points a channel at a time.

(7) Base station frequencies for the Taxicab Radio Service will be assigned serially beginning at 472.9875 MHz for Miami, 484.9875 for Dallas, and 490.9875 MHz for Houston and progressing a channel at a time downward from those points.

[43 FR 54791, Nov. 22, 1978, as amended at 44 FR 49692, Aug. 24, 1979; 51 FR 4362, Feb. 4, 1986; 54 FR 39532, Sept. 27, 1989]

§ 90.313 Frequency loading criteria.

(a) Except as provided for in paragraph (b), the maximum channel loading on frequencies in the 470-512 MHz band is as follows:

(1) 50 units in the Public Safety Radio Services.

(2) 70 units in the Industrial Radio Services (except business).

(3) 90 units in the Business Radio Service.

(4) 150 units in the Taxicab Radio Service, except in the New York Northeast New Jersey urbanized areas where the loading is 200 units.

(5) 70 units in the Railroad, Motor Carrier, and Automobile Emergency Radio Services except in the intraurban passenger carrier sub-category

e Motor Carrier Radio Service
the loading is 150 units.

If a licensee has exclusive use of
quency, then the loading standn paragraph (a) of this section,
be exceeded. If it is a shared
el, the loading standards can be
ded upon submission of a signed
nent by all those sharing the
el agreeing to the increase.

A unit is defined as a mobile
nitter-receiver. Loading standwill be applied in terms of the
er of units actually in use or to
aced in use within 8 months folg authorization. A licensee will
quired to show that an assigned
ency pair is at full capacity
e it may be assigned a second or
onal frequency pair. Channel cay may be reached either by the
rements of a single licensee or by
al users sharing a channel. Until
nnel is loaded to capacity it will
ailable for assignment to other
in the same area. A frequency
may be reassigned at distances 64
40 mi.), 32 km. (20 mi.) for Chan-
5, Chicago; Channel 20, Philadeland Channel 17, Washington, or
from the location of base staauthorized on that pair without
ence to loading at the point of
al installation. Following authorn, the licensee shall notify the
mission either during or at the
of the 8 month period of the
er of units in operation. In the
strial Radio Services, if the base
n facility is to be used by more
a single licensee, the frequency
ned to it will not be reassigned for
y another facility within 64 km.
i.) or 32 km. (20 mi.) where appli-
for a period of 12 months, *Pro-*
d, That the facility is constructed
in 90 days from the date of the
grant, meets the loading stand
to at least 50 percent within 9
ths, and meets all loading standwithin 12 months.

R 54791, Nov. 22, 1978, as amended at
36649, Aug. 23, 1982]

§ 90.315 Special provisions governing use of frequencies in the 476–494 MHz band (TV Channels 15, 16, and 17) in the Southern Louisiana-Texas Offshore Zone.

(a) The frequency bands from 490–491 and 493–494 MHz will be available for assignment to stations governed by this part within Zone A. The boundaries of Zone A are from longitude 87°45′ on the east to longitude 94°00′ on the west, and from the three mile limit along the Gulf of Mexico shoreline on the north to the limit of the Outer Continental Shelf on the south. The frequency bands from 484–485 and 476–488 MHz will be available for assignment to stations governed by this part within Zone B. The boundaries of Zone B are from longitude 87°45′ on the east to longitude 95°00′ on the west and from the 3-mile limit along the Gulf of Mexico shoreline on the north to the limit of the Outer Continental Shelf on the south. The frequency bands from 478-479 and 481-482 MHz will be available for assignment to stations governed by this part within Zone C. The boundaries of Zone C are from longitude 94°00′ on the east, the 3-mile limit on the north and west, a 175 mile radius from the reference point at Linares, N.L., Mexico on the southwest, latitude 26°00′ on the south, and the limits of the Outer Continental Shelf on the southeast. These frequencies may also be assigned to fixed stations located on shore designed to provide communications service within the zone.

(b) Offshore base/mobile, and offshore and shore fixed stations may be authorized.

(c) F2, F3, F4, F9, and A2, A3, A4, and A9 emissions may be authorized.

(d) Offshore stations shall afford cochannel protection to TV stations on Channels 15, 16 and 17. Station operating parameters shall be in accordance with the values given in Table 1 of this section.

TABLE 1—PROTECTION OF COCHANNEL TELEVISION STATIONS BY OFFSHORE STATIONS OPERATING IN THE SOUTHERN LOUISIANA-TEXAS OFFSHORE ZONE (65 dB PROTECTION); MAXIMUM EFFECTIVE RADIATED POWER (IN WATTS)

Distance from transmitter to cochannel TV station (miles)	Antenna height above sea level (feet)		
	100	150	200
210	1,000	1,000	1,000
205	1,000	900	800
200	800	710	630
195	590	520	450
190	450	400	330
185	320	280	240
180	250	210	175
175	175	150	130
170	130	110	100
165	95	80	70
160	65	55	50
155	50	40	35
150	35	30	25

NOTE: To determine the maximum permissible effective radiated power:

(1) As specified in § 73.611 determine the distance between the proposed station and the cochannel television station. If the exact mileage does not appear in Table 1 of this section, the next lower mileage separation is to be used.

(2) Opposite this mileage figure ERPs are given that may be used for antenna heights of 100, 150, or 200 ft. ASL. If the exact antenna height is not shown, the ERP allowed will be that shown for the next higher antenna height.

(e) Shore stations communicating point-to-point with offshore stations will be permitted at least the same ERP as the offshore station, but only in the direction of the offshore station. A directional antenna shall be used and the rearward radiated power from the antenna in a sector ±22½° from the line joining the shore antenna to the cochannel television station shall not exceed those shown in Table 2 of this section.

TABLE 2—MAXIMUM REARWARD E RADIATED POWER ALLOWED FOR STATIONS; REARWARD EFFECTIVE R POWER (IN WATTS) FROM SHORE A IN A SECTOR ±22½° FROM THE L ING THE SHORE ANTENNA TO THE C NEL TELEVISION STATION

Distance from transmitter to cochannel television station	Antenna height above ground			
	100	150	200	300
185	320	280	240	190
180	250	210	175	125
175	175	150	130	100
170	130	110	100	75
165	95	82	70	50
160	65	55	50	40
155	50	40	35	30
150	35	30	25	20
145	25	20	18	15
140	18	15	13	10
135	13	10	9	7
130	10	8	6	5
125	7	6	5	4
120	5	4	3	3

NOTE: As an example of the use of 1 and 2, assume an offshore station 180 mi from TV Channel 17 located in MS with an antenna height of 100 ft. 1 allows this station to operate with ERP. Now assume the shore station nicating with the offshore station from the offshore station and 150 m Bude, MS. The shore station height is 500 ft. above ground. The station will be allowed the same ERP offshore station (250 W) in the direct the offshore station. Table 2 indicate the effective radiated power in a ±22½° from the line joining the sho tenna to Bude, MS can only be 15 W. quently, a directional antenna must b whose minimum front-to-back ratio this 45° sector must be at least 12.2 dB W forward power to 15 W rearward po a power ratio of 16.6 or 12.2 dB).

(f) To provide cochannel prote to television stations, no shore st will be allowed closer than 120 from the cochannel television sta

(g) To provide adjacent channel tection to television stations, no s or offshore station shall be all within an 80 mile distance of the cent channel television station.

(h) Mobile stations shall not ope closer to shore than 4 miles be the three mile limit and shall no erate with an ERP in excess of 100 watts with 30 ft. maximum antenna height.

(i) Mobile stations installed in aircraft shall operate 7 miles beyond the three mile limit and shall not operate with an ERP in excess of 1 watt or at heights in excess of 1000 feet AMSL.

(j) The following frequencies are available for assignment in all services for use in the Zones as defined in paragraph (a) of this section.

PAIRED FREQUENCIES (MEGAHERTZ)

Zone	Transmit (or receive)	Receive (or transmit)
A	490.025–490.975	493.025–493.975
B	484.025–484.975	487.025–487.975
C	478.025–478.975	481.025–481.975

Only the first and last assignable frequencies are shown. Frequencies shall be assigned in pairs with 3 MHz spacing between transmit and receive frequencies. Assignable frequency pairs shall occur in increments of 25 kHz.

(k) Fixed stations operating point-to-point shall be assigned frequencies beginning with 490.025/493.025 MHz (Zone A), 484.025/487.025 MHz (Zone B) and 478.025–481.025 MHz (Zone C) and progressing upwards utilizing available frequencies toward the end of the band. Offshore base/mobile stations shall be assigned frequencies beginning at 490.975/493.975 MHz (Zone A), 484.975/478.975 MHz (Zone B) and 478.975/481.975 MHz (Zone C) and progressing downwards utilizing available frequencies toward the beginning of the band. All frequency assignments are subject to the conditions specified in § 90.173.

(l) Bandwidths other than 25 kHz may be authorized upon an adequate showing of need. An application requesting such authorization shall fully describe the modulation, emission and bandwidth desired, the bandwidth to be occupied, and justification for the request.

(m) Stations located east of 92°W longitude in the Southern Louisiana Offshore Zone may be authorized frequencies that are offset by 12.5 kHz from regularly assigned Zone A frequencies (490-491 and 493-494 MHz). Such assignments will be on a secondary, non-interference basis to primary authorized stations and shall be entitled to no protection from these stations.

[50 FR 12027, Mar. 27, 1985; 50 FR 14389, Apr. 12, 1985]

Subpart M—[Reserved]

Subpart N—Operating Requirements

§ 90.401 Scope.

The subpart prescribes general operating requirements for stations licensed under this part. This includes station operating procedures, points of communication, permissible communications, methods of station identification, control requirements, and station record keeping requirements.

§ 90.403 General operating requirements.

(a) Licensees of radio stations in the private land mobile radio services shall be directly responsible for the proper operation and use of each transmitter for which they are licensed. In this connection, licensees shall exercise such direction and control as is necessary to assure that all authorized facilities are employed:

(1) Only for permissible purposes;

(2) Only in a permissible manner; and

(3) Only by persons with authority to use and operate such equipment.

(b) In carrying out their responsibilities under § 90.403(a), licensees shall be bound by the provisions of the Communications Act of 1934, as amended, and by the rules and regulations of the Commission governing the radio service in which their facilities are licensed; and licensees may not, through written or oral agreements or otherwise, relieve themselves of any duty or obligation imposed upon them, by law, as licensees.

(c) Each licensee shall restrict all transmissions to the minimum practicable transmission time and shall employ an efficient operating procedure designed to maximize the utilization of the spectrum.

(d) Communications involving the imminent safety-of-life or property are to be afforded priority by all licensees.

(e) Licensees shall take reasonable precautions to avoid causing harmful interference. This includes monitoring the transmitting frequency for communications in progress and such other measures as may be necessary to minimize the potential for causing interference.

(f) Stations licensed in this part shall not continuously radiate an unmodulated carrier except where required for tests as permitted in § 90.405, except where specifically permitted by this part, where specifically authorized in the station authorization, or on an as needed basis in the Radiolocation Radio Service.

(g) The radiations of the transmitter shall be suspended immediately upon detection or notification of a deviation from the technical requirements of the station authorization and until such deviation is corrected. For transmissions concerning the imminent safety-of-life or property, the transmissions shall be suspended as soon as the emergency is terminated.

[43 FR 54791, Nov. 22, 1978; 44 FR 32220, June 5, 1979]

§ 90.405 Permissible communications.

(a) Stations licensed under this part may transmit only the following types of communication:

(1) Any communication related directly to the imminent safety-of-life or property;

(2) Communications directly related and necessary to those activities which make the licensee eligible for the station license held under this part. In addition, when communication service is provided under the cooperative sharing provisions of § 90.179, the licensee providing such service may transmit communications related to the activities for which the parties receiving the service would be eligible to be licensed.

(3) Communications for testing purposes required for proper station and system maintenance. However, each licensee shall keep such tests to a minimum and shall employ every measure to avoid harmful interference.

(b) The restrictions contained in paragraph (a) of this section shall not apply where a single base station licensee has been authorized to use a channel on an exclusive basis abo 470 MHz under this part.

[50 FR 6182, Feb. 14, 1985, as amended at FR 39740, Sept. 28, 1989]

§ 90.407 Emergency communications.

The licensee of any station authorized under this part may, during a period of emergency in which the normal communication facilities are disrupted as a result of hurricane, flood, earthquake or similar disaster, utilize such station for emergency communications in a manner other than that specified in the station authorization or in the rules and regulations governing the operation of such stations. The Commission may at any time order the discontinuance of such special use of the authorized facilities.

[49 FR 36376, Sept. 17, 1984]

§ 90.411 Civil defense communications.

The licensee of any station authorized under this part may, on a voluntary basis, transmit communications necessary for the implementation of civil defense activities assigned such station by local civil defense authorities during an actual or simulated emergency, including drills and tests. The Commission may at any time order the discontinuance of such special use of the authorized facilities.

[49 FR 36376, Sept. 17, 1984]

§ 90.415 Prohibited uses.

Stations licensed under this part shall not:

(a) Transmit program material of any kind for use in connection with broadcasting; or

(b) Render a communications common carrier service, except for stations in the Special Emergency Radio Service providing communications standby facilities under § 90.49, or operational fixed stations licensed in the Railroad Radio Service handling public telegraph messages as agents of telegraph common carriers in those instances where such public telegraph service cannot be efficiently provided through other railroad facilities.

0.417 Interstation communication.

a) Any station licensed under this rt may communicate with any other ation without restriction as to type, rvice, or licensee when the communi- tions involved relate directly to the minent safety-of-life or property.

(b) Any station licensed under this rt may communicate with any other ation licensed under this part, with S. Government stations, and with reign stations, in connection with utual activities, provided that where e communication involves foreign ations prior approval of the Commis- on must be obtained, and such com- unication must be permitted by the overnment that authorizes the for- gn station. Communications by olice Radio Service stations with for- gn stations will be approved only to e conducted in accordance with arti- le 5 of the Inter-American Radio greement, Washington, DC, 1949, the rovisions of which are set forth in 90.19(c).

90.419 Points of communication.

Normally, operations licensed under his part are intended to provide in- rastation mobile communications. For xample, a base station is intended to ommunicate with its associated nobile stations and mobile stations re intended to communicate between ssociated mobile stations and associated base stations of the licensee. Accordingly, operations between base stations at fixed locations are permitted only in the following situations:

(a) Base stations licensed in the Public Safety and Special Emergency Radio Services may communicate with other base stations, operational fixed stations, or fixed receivers authorized in these services on frequencies below 450 MHz only on a secondary basis.

(b) Base stations licensed on any frequency in the Industrial and Land Transportation Radio Services and on base station frequencies above 450 MHz in the Public Safety and Special Emergency Services may communicate on a secondary basis with other base stations, operational fixed stations, or fixed receivers authorized in these services only when:

(1) The messages to be transmitted are of immediate importance to mobile stations; or

(2) Wireline communications facilities between such points are inoperative, economically impracticable, or unavailable from communications common carrier sources. Temporary unavailability due to a busy wireline circuit is not considered to be within the provisions of this paragraph.

(c) Operational fixed stations may communicate with units of associated mobile stations only on a secondary basis.

(d) Operational fixed stations licensed in the Industrial and Land Transportation Radio Services may communicate on a secondary basis with associated base stations licensed in these services when:

(1) The messages to be transmitted are of immediate importance to mobile stations; or

(2) Wireline communications facilities between such points are inoperative, economically impracticable, or unavailable from communications common carrier sources. Temporary unavailability due to a busy wireline circuit is not considered to be within the provisions of this paragraph.

(e) Travelers' Information Stations are authorized to transmit certain information to members of the traveling public (see § 90.242).

[43 FR 54791, Nov. 22, 1978, as amended at 54 FR 38681, Sept. 20, 1989]

§ 90.421 Operation of mobile units in vehicles not under the control of the licensee.

Mobile station transmitters may be installed in vehicles operated by persons other than the licensee as provided in the following paragraphs when necessary for the licensee to meet his requirements in connection with the activities for which he is licensed. The number of units so installed, together with units installed in vehicles operated by the licensee, must not exceed the number of mobile units authorized to the licensee. When an insufficient number of units is licensed to cover such additional units, the license must be modified to add a sufficient number of mobile units. The licensee is responsible for taking any necessary precaution to effectively eliminate the possibility of unauthorized operation of transmitters when not under the control of the licensee.

(a) Mobile units licensed in the Local Government Radio Service may be installed in any vehicle which in an emergency would require cooperation and coordination with the licensee, and in any vehicle used in the performance, under contract, of official activities of the licensee. This includes ambulances, emergency units of public utilities, lifeguard units, and vehicles of contractors or other persons or agencies performing for the licensee under contract one or more of its local government functions. This provision does not permit the installation of radio units in non-emergency vehicles not performing governmental functions under contract but with which the licensee might wish to communicate.

(b) Mobile units licensed in the Police Radio Services may be installed in any vehicle which in an emergency would require cooperation and coordination with the activities of the licensee. This includes emergency units of public utilities, lifeguard emergency units, ambulances, fire department vehicles and rural school buses.

(c) Mobile units licensed in the Fire Radio Service may be installed in emergency vehicles which may be alerted during a fire emergency. This includes emergency units of public utilities and water departments.

(d) Mobile units licensed in the Highway Maintenance Radio Service may be installed in vehicles of contractors or other persons having a direct responsibility for official highway activities.

(e) Mobile units licensed in the Forestry-Conservation Radio Services may be installed in vehicles of forestry cooperators, and persons having a direct responsibility in the prevention, detection, and suppression of forest fires.

(f) Mobile units licensed in the medical services category of the Special Emergency Radio Service may be installed in a vehicle or be hand-carried for use by any person with whom cooperation or coordination is req
for medical services activities.

(g) Mobile units licensed in th
dustrial Radio Services may b
stalled in vehicles of persons fu
ing under contract to the licensee
for the duration of the contract,
cility or service directly related t
activities of the licensee.

(h) Mobile units licensed to an
tric utility in the Power Radio Se
on frequencies designated for u
an interconnected utility system
be installed in any vehicle operat
an organization or association
prised of interconnected electric
ties forming interconnections,
pools or groups.

(i) Mobile units authorized in
Automobile Emergency Radio Se
may be installed in the vehicles o
sons furnishing a private emer
road service to its members pur
to a contract with the association.

(j) Mobile units licensed to an
ble in the Railroad Radio Service
be installed in vehicles operated
ganizations providing, under con
facilities or service in connection
railroad operation or maintenan
cluding pickup, delivery, or tra
between stations of property shi
continued in, or destined for ship
by railroad common carrier. Part
the contract must comply with
provisions of § 90.179.

(k) In addition to the above,
quencies assigned to licensees in
Private Land Mobile Radio Ser
may be installed in the faciliti
those who assist the licensee in
gencies and with whom the lic
must communicate in situation
volving imminent safety to lif
property.

[43 FR 54791, Nov. 22, 1978, as amen
44 FR 50603, Aug. 29, 1979; 47 FR
May 6, 1982; 47 FR 42751, Sept. 29, 198

§ 90.423 Operation on board aircraft.

(a) Except as provided in paragr
(b), (c), and (d) of this section,
except as may be provided in
sections of this part with respe
operation on specific freque
mobile stations first authorized
September 14, 1973, under this
may be operated aboard aircraft

air-to-mobile, air-to-base, air-to-air and air-to-ship communications subject to the following:

(1) Operations are limited to aircraft that are regularly flown at altitudes below one mile (1.6 km) above the earth's surface;

(2) Transmitters are to operate with an output power not to exceed ten watts;

(3) Operations are secondary to land-based systems;

(4) Such other conditions, including additonal reductions of altitude and power limitations, as may be required to minimize the interference potential to land-based systems.

(b) Exceptions to the altitude and power limitations set forth in paragraph (a) of this section may be authorized upon a showing of unusual operational requirements which justify departure from those standards, provided that the interference potential to regular land-based operations would not be increased.

(c) Mobile operations aboard aircraft in the services governed by this part, under licenses in effect September 14, 1973, may be continued without regard to provisions of paragraph (a) of this section, as follows:

(1) Operations may be continued only for the balance of the term of such licenses if aircraft involved are regularly flown at altitudes greater than one mile (1.6 km) above the earth's surface.

(2) Operations may be continued for one additional renewal license term if the aircraft involved are regularly flown at altitudes below one mile (1.6 km) above the earth's surface.

(d) Operation of radiolocation mobile stations may be authorized without regard to limitations and conditions set forth in paragraphs (a), (b), and (c) of this section.

§ 90.425 Station identification.

Stations licensed under this part shall transmit identification in accordance with the following provisions:

(a) *Identification procedure.* Except as provided for in paragraph (d) of this section, each station or system shall be identified by the transmission of the assigned call sign during each transmission or exchange of transmissions, or once each 15 minutes (30 minutes in the Public Safety and Special Emergency Radio Services) during periods of continuous operation. The call sign shall be transmitted by voice in the English language or by International Morse Code in accordance with paragraph (b) of this section. If the station is employing either analog or digital voice scrambling, or non-voice emission, transmission of the required identification shall be in the unscrambled mode using A3E, F3E or G3E emission, or International Morse, with all encoding disabled. Permissible alternative identification procedures are as follows:

(1) A mobile relay station call sign may be used to identify the associated control and mobile stations, except in the Public Safety and Special Emergency Radio Services where the stations operate on frequencies below 450 MHz. Alternatively, a base station (including a mobile relay station) which is controlled by radio may be identified by the transmission of the call sign of the station at which communications originate.

(2) One or more fixed relay stations may be identified by the transmission of the call signs of the stations at which the communications originate.

(3) When a mobile station transmits on a different frequency than its associated base station, the assigned call sign of either the mobile station or the base station may be transmitted. Further, a single mobile unit in the licensee's authorized geographic area of operation may transmit station identification on behalf of any other operating mobile units in the fleet.

(4) *Use of an identifier other than the assigned call sign.* (i) In the Public Safety and Special Emergency Radio Services, mobile units licensed to a governmental entity and which operate on frequencies above 30 MHz may use an indentifier which contains, at a minimum, the name of the licensee if the licensee maintains at the station a list of the special identifier(s) to be used by the mobile units.

(ii) In the Land Transportation Radio Services, licensees may request the Commission's local Engineer-in-Charge to approve the use of special mobile unit identifiers in lieu of the assigned call sign. Such requests, however, will not be granted where it appears that harmful interference to international operations may be caused by stations below 50 MHz, or by stations operating in areas within 50 miles of an international boundary, or where it appears that the proposed method of identification will not adequately distinguish the mobile units of the applicant from the mobile units of other licensees in the area.

(iii) In the Railroad Radio Service, stations may be identified by the name of the railroad and the train number, caboose number, engine number, or the name of the fixed wayside station. If none of these forms are practicable, any similar name or number may be designated by the railroad concerned for use by its employees in the identification of fixed points or mobile units; *Provided*, That, a list of such identifiers is maintained by the railroad. An abbreviated name or the initials of the railroad may be used where such are in general usage. In those areas where it is shown that no difficulty would be encountered in identifying the transmission of a particular station (as, for example, where stations of one licensee are located in a yard isolated from other radio installations), approval may be given to a request from the licensee for permission to omit the station identification.

(5) *Use of identifiers in addition to assigned call signs.* Nothing in this section shall be construed as prohibiting the transmission of station or unit identifiers which may be necessary or desirable for system operation, *Provided*, That, they are transmitted in addition to the assigned station call sign or other permissible form of identification.

(b) *Use of automatic Morse code identification equipment.* Automatically activated equipment may be used to transmit station identification in International Morse Code pursuant to the following conditions:

(1) The signal output of the automatic identification equipment shall be connected to the transmitter at the microphone input or any other manufacturer-provided signal input terminal and shall be adjusted to produce 40 percent ± 10 percent of the maximum permissible modulation or deviation level. This adjustment shall be performed when all other modulating signals are absent.

(2) The Morse code transmission rate shall be maintained between and 25 words per minute.

(3) The frequency of the keyed tone comprising the identification signal shall be 1200 ± 800 Hz. A licensee may be required to change the frequency in order to prevent interference to the operations of another co-channel licensee.

(4) Should activation of automatic Morse code identification equipment interrupt the communications of another co-channel licensee, the Commission may require the use of equipment which will delay automatic station identification until such co-channel communications are completed.

(c) *Special provisions for identification in the Radiolocation Service.* (1) Stations in the Radiolocation Service are not required to identify except upon specific instruction from the Commission or as required by paragraph (c)(2) of this section.

(2) Stations in the Radiolocation Service operating on frequencies above 3400 kHz that employ spread spectrum techniques shall transmit a two-letter manufacturer's designator, authorized by the Commission on the station authorization, at the beginning and ending of each transmission and once every 15 minutes during periods of continuing operation. The designator shall be transmitted in International Morse Code at a speed not exceeding 25 words per minute, and the spread spectrum mode of operation shall be maintained while the designator is being transmitted. The identifying signal shall be clearly receivable in the demodulated audio of a narrow-band FM receiver.

(d) *General exemptions.* A station need not transmit identification if:

(1) It is a mobile station operating on the transmitting frequency of the associated base station.

(2) It is a mobile station in the Police or Fire Radio Services using F1E or G1E emission.

(3) It is transmitting for telemetering purposes or for the activation of devices which are employed solely as a

s of attracting attention, or for
te control purposes, or which is
nsmitting by self-actuating
s, a radio signal received from an-
r radio station or stations.

It is any type of radiopositioning
dar station authorized in a service
r than the Radiolocation Service.

It is used solely for automatic ve-
monitoring or location.

It is a paging station authorized
ccordance with the provisions of
38 (a).

It is a mobile station employing
voice emissions and the associated
station identifies on behalf of the
le unit(s).

R 54791, Nov. 22, 1978]

TORIAL NOTE: For Federal Register cita-
affecting § 90.425, see the List of CFR
ons Affected in the Finding Aids sec-
of this volume.

27 Precautions against unauthorized peration.

Each transmitter shall be so in-
ed and protected that it is not ac-
ble to or capable of operation by
ons other than those duly author-
by and under the control of the li-
ee. Provisions of this part author-
certain unlicensed persons to op-
e stations, or authorizing unat-
led operation of stations in certain
umstances, shall not be construed
hange or diminish in any respect
responsibility of station licensees
naintain control over the stations
sed to them (including all trans-
er units thereof), or for the proper
ctioning and operation of those
ions and transmitter units in ac-
lance with the terms of the li-
es of those stations.

) Except for frequencies used in
ordance with § 90.417, no person
l program into a transmitter fre-
ncies for which the licensee using
transmitter is not authorized.

FR 54791, Nov. 22, 1978, as amended at
R 47570, Dec. 15, 1987]

429 Control point and dispatch point requirements.

) *Control point required.* Unless
mitted to be operated on an unat-
ded basis, each station shall be pro-
ed with a control point;

(b) A control point is an operating position:

(1) Which must be under the control and supervision of the licensee;

(2) Where a person immediately responsible for the operation of the transmitter is stationed;

(3) Where the monitoring facilities required by this part are installed.

(c) *Control point location.* The location of the control point will be specified in the station license and will be assumed to be the same as that of the transmitting equipment unless an application for a different location has been approved by the Commission.

(d) *Control point facilities required.* At each control point, the following facilities shall be installed:

(1) A carrier-operated device which will provide continuous visual indication when the transmitter is radiating, or, a pilot lamp or meter which will provide continuous visual indication when the transmitter circuits have been placed in a condition to produce radiation. The provisions of this subparagraph shall not apply to hand-carried transmitters or transmitters installed on motorcycles. The control point for a transmitter utilized to activate another radio station may employ a single pilot lamp or meter as an indication of the activation of local and remote transmitters.

(2) Facilities which will permit the person responsible for the operation of the transmitter either to disconnect the dispatch point circuits from the transmitter or to render the transmitter inoperative from any dispatch point under his supervision; and

(3) Facilities which will permit the person responsible for the operation of the transmitter to turn the transmitter carrier on and off at will.

(e) *Dispatch point.* A dispatch point is any position from which messages may be transmitted under the supervision of the person at a control point who is responsible for the operation of the transmitter. Dispatch points may be installed without authorization from the Commission.

[43 FR 54791, Nov. 22, 1978; 44 FR 67118, Nov. 23, 1979, as amended at 48 FR 29517, June 27, 1983]

§ 90.431 Unattended operation.

No person is required to be in attendance at a station when transmitting during normal rendition of service and when either:

(a) Transmitting for telemetering purposes; or,

(b) Retransmitting by self-actuating means a radio signal received from another radio station or stations.

§ 90.433 Operator requirements.

(a) No operator license or permit is required for the operation, maintenance, or repair of stations licensed under this part.

(b) Any person, with the consent or authorization of the licensee, may employ stations in this service for the purpose of telecommunications.

(c) The station licensee shall be responsible for the proper operation of the station at all times and is expected to provide observations, servicing and maintenance as often as may be necessary to ensure proper operation. All adjustments or tests during or coincident with the installation, servicing, or maintenance of the station should be performed by or under the immediate supervision and responsibility of a person certified as technically qualified to perform transmitter installation, operation, maintenance, and repair duties in the private land mobile services and fixed services by an organization or committee representative of users in those services.

(d) The provisions of paragraph (b) of this section shall not be construed to change or diminish in any respect the responsibility of station licensees to have and to maintain control over the stations licensed to them (including all transmitter units thereof), or for the proper functioning and operation of those stations (including all transmitter units thereof), in accordance with the terms of the licenses of those stations.

(Secs. 4(i) and 303(r), Communications Act of 1934, as amended, 47 U.S.C. 154(i) and 303(r), and sec. 553 of the Administrative Procedures Act, 5 U.S.C. 553)

[49 FR 20672, May 16, 1984]

§ 90.437 Posting station licenses.

(a) The current original auth
tion for each station shall be re
as a permanent part of the
records but need not be posted.

(b) A clearly legible photocop
the authorization for each
fixed station at a fixed location
be posted at every control point of
station.

(c) Entities operating under a te
rary permit authorized in accor
with § 90.159 should post an exe
copy of FCC Form 572, at every
trol point of the system.

(d) An applicant operating und
temporary permit authorized i
cordance with § 90.657 must retai
executed copy of FCC Form 572
permanent part of the station reco

[43 FR 54791, Nov. 22, 1978, as amende
45 FR 59884, Sept. 11, 1980; 47 FR
Sept. 16, 1982; 47 FR 51883, Nov. 18, 19
FR 4030, Jan. 27, 1989]

§ 90.439 Inspection of stations.

All stations and records of sta
in these services shall be made av
able for inspection at any reason
time and any time while the statio
in operation upon reasonable requ
of an authorized representative of
Commission.

**§ 90.441 Inspection and maintenan
tower marking and associated co
equipment.**

(a) The licensee of any radio sta
with an antenna structure that m
be painted or illuminated as specifi
in the station authorization is requi
to maintain the tower marking and
sociated control equipment in accor
ance with the following:

(1) The tower lights shall be check
at least once each 24 hours. Assura
that such lights are functioning pro
erly shall be accomplished by visua
observing either the tower lights or
observing an automatic indicator th
registers any failure of such lights. A
ternately, an automatic alarm syste
which detects any failure of the tow
lights and indicates such failure to th
licensee may be used but must
properly maintained.

(2) Any observed or otherwise know
failure of a code or rotating beac

ight or top light not corrected within 0 minutes, regardless of the cause of uch failure, shall be reported immediately by telephone or telegraph to the nearest Flight Service Station or office of the Federal Aviation Adminstration. Further notification by telephone or telegraph shall be given immediately upon resumption of the required illumination.

(3) All automatic or mechanical control devices, indicators, and alarm systems associated with the tower lights shall be inspected at intervals not to exceed three months, to insure that such apparatus is functioning properly.

(4) All lighting shall be exhibited from sunset to sunrise unless otherwise specified in the instrument of station authorization.

(5) All towers shall be cleaned or repainted as often as is necessary to maintain good visibility.

(b) Licensees operating stations licensed under this part which share a tower used for antenna and/or antenna supporting purposes with other licensees under this chapter may designate in writing one licensee or a nonlicensed agent to be responsible for maintenance and inspection of the tower and maintenance of the inspection log. In such cases, a copy of the agreement must be kept in each participating licensee's station records.

[43 FR 54791, Nov. 22, 1978, as amended at 49 FR 36377, Sept. 17, 1984]

§ 90.443 Content of station records.

Each licensee of a station in these services shall maintain records in accordance with the following:

(a) For all stations, the results and dates of the transmitting measurements required by § 90.215 of this part and the name of the person or persons making the measurements.

(b) For all stations, the dates and pertinent details of any maintenance performed on station equipment, and the name and address of the service technician who did the work. If all maintenance is performed by the same technician or service company, the name and address need be entered only once in the station records.

(c) For stations whose antenna or antenna supporting structure must be illuminated, the licensee will record:

(1) The time the tower lights are turned on and off each day, if manually controlled.

(2) The time the daily check of proper operation of the tower lights was made, if an automatic alarm system is not provided.

(3) Any observed or otherwise known failure of a tower light by indicating:

(i) The nature of such failure.

(ii) The date and time the failure was observed or otherwise noted.

(iii) The date, time, and nature of adjustments, repairs or replacements made.

(iv) The identification of the Flight Service Station (Federal Aviation Administration) notified of the failure of any code or rotating beacon light not corrected within 30 minutes, and the date and time such notice was given.

(v) The date and time notice was given to the Flight Service Station of the Federal Aviation Administration that the required illumination was resumed.

(4) The completion of the 3-month periodic inspection required by § 90.441 of this part by indicating:

(i) The date of the inspection and the condition of all tower lights and associated tower lighting control devices, indicators and alarm systems.

(ii) Any adjustments, replacements, or repairs made to insure compliance with the lighting requirements and the date such adjustments, replacements or repairs were made.

(d) For private land stations that are interconnected with the public switched telephone network, the licensee must maintain a detailed description of how interconnection is accomplished. When telephone service costs are shared, at least one licensee participating in the cost sharing arrangement must maintain cost sharing records. A report of the cost distribution must be placed in the licensee's station records and made available to participants in the sharing and the Commission upon request. See § 90.477.

(e) For shared land stations, the records required by § 90.179.

[43 FR 54791, Nov. 22, 1978, as amended at 48 FR 26621, June 9, 1983; 48 FR 29518, June 27, 1983; 50 FR 39681, Sept. 30, 1985; 50 FR 40976, Oct. 8, 1985]

§ 90.445 Form of station records.

(a) Station records shall be kept in an orderly manner, and in such detail that the data required are readily available. Key letters or abbreviations may be used if proper meaning or explanation is set forth in the record.

(b) Each entry in the records of each station shall be signed by a person qualified to do so, having actual knowledge of the facts to be recorded.

(c) No record or portion thereof shall be erased, obliterated, or wilfully destroyed within the required retention period. Any necessary correction may be made only by the person originating the entry, who shall strike out the erroneous portion, initial the correction made, and indicate the date of correction.

§ 90.447 Retention of station records.

Records required by this part shall be retained by the licensee for at least one year.

§ 90.449 Answers to a notice of violation.

Any licensee receiving official notice of a violation of the terms of the Communications Act of 1934, as amended, any legislative act or treaty to which the United States is a party, or the rules and regulations of the Federal Communications Commission, shall, within 10 days from such receipt or such other period as may be specified, send a written answer to the office of the Commission originating the original notice. If an answer cannot be sent, or an acknowledgement made within such period, acknowledgement and answer shall be made at the earliest practicable date with a satisfactory explanation of the delay. The answer to each notice shall be complete in itself and shall not be abbreviated by reference to other communications or answers to other notices. The reply shall set forth the steps taken to prevent a recurrence of improper operation.

Subpart O—Transmitter Control

§ 90.460 Scope.

This subpart sets forth the provisions relating to permissible methods of transmitter control and interconnection (see the definition in § 90.7) of radio systems authorized under this part. The rules become effective for new systems on October 17, 1978. Licensees of existing systems shall bring their facilities into compliance with the provisions of this subpart by January 1, 1984.

[44 FR 67124, Nov. 23, 1979]

§ 90.461 Direct and remote control of transmitters.

(a) *In general.* Radio transmitters may be operated and controlled directly (as when the operating position for the transmitter and the transmitter being operated are at the same location), or remotely (as when the transmitter being operated and the position from which it is being operated are at different locations).

(b) *Control of transmitters at remote locations.* Radio transmitters at remote locations may be operated and controlled through the use of wire line or radio links; or through dial-up circuits, as provided in paragraph (c) of this section. Such control links or circuits may be either those of the licensee or they may be provided by common carriers authorized by law to furnish such service.

(c) *Dial-up circuits.* Dial-up circuits may be provided by wire line telephone companies under appropriate tariffs, and they may be used by licensees for purposes of transmitter control, provided:

(1) The dial-up circuits serve only to link licensed transmitter control points and the transmitters being controlled.

(2) The dial-up circuits are so designed that the transmitters being controlled cannot be operated from any fixed position other than the licensed control points for those transmitters.

(3) Equipment used to provide the transmitter/dial-up-circuit interface is designed to preclude associated mobile units of the licensee from reaching

oint(s) served by the wire line
hone facilities other than the
ol point(s) of the station(s) con-
d.

Any direct electrical connection
e telephone network shall comply
applicable tariffs and with part
f the Commission's rules (See
(h)).

Interconnection, within the
ing of §§ 90.7 and 90.477 through
3, may not take place at a control
which connects to its associated
mitter(s) through dial-up circuits;
ay such dial-up transmitter con-
circuits be used in conjunction
(or shared by) interconnection
ment.

R 54791, Nov. 22, 1978, as amended at
67124, Nov. 23, 1979]

53 Transmitter control points.

A control operator is required to
ationed at the operating position
transmitter control point. A con-
perator is any person designated
e licensee to exercise supervision
ontrol over the operation and use
e licensee's facilities. The control
tor may be the licensee; or an
oyee of the licensee; or the agent
e licensee, appointed by the li-
e to act as the control operator;
third-party contractor, engaged
e licensee to serve as the control
tor: *Provided, however,* In no
through appointment or designa-
of any person to serve as control
tor, may the licensee delegate
of the duties and responsibilities
icensee may have in his capacity
ensee.

Each station or licensed system
mmunication shall normally have
ntrol point, or control points, at
h the control operator or opera-
are stationed and at or from
h the licensee may exercise super-
n and control over the authorized
ities, as required by the provisions
0.461. *Provided, however,* Control
t requirements may vary from one
m to another, depending upon
ature of the radio operation; the
and by whom the facilities are
oyed; and other factors, as set out
her rule sections under this sub-

(c) A transmitter control point may be located at a fixed position in a system of communication at or from which the control operator exercises supervision and control over the operation and use of the licensed facilities. Each fixed transmitter control point shall have equipment and facilities to permit the control operator:

(1) To determine when the transmitter or transmitters controlled are either radiating "RF" energy, or when the transmitter circuits have been placed in a condition to produce such radiation. This may be accomplished either through the use of a carrier operated device which provides a visual indication when the transmitter(s) are radiating or a pilot lamp or meter which provides a visual indication when the transmitter circuits have been placed in a condition to produce radiation. Further, where a local transmitter is used to activate a remote transmitter or transmitters in the licensee's system of communication, a single pilot lamp or meter may be employed to indicate the activation of both the local and the remote transmitter(s).

(2) To turn the carrier of the transmitter on and off at will, or to close the system down completely, when circumstances warrant such action.

(d) The licensee's transmitting facilities may be operated from dispatch points, the fixed control point shall have equipment to permit the control operator to either disconnect the dispatch point circuits from the transmitter(s) or to render the transmitter(s) inoperative from any dispatch point being supervised.

(e) Where the system is interconnected with public communication facilities, as provided at §§ 90.477 through 90.483, and where those rules so require, the fixed control point shall be equipped to permit the control operator:

(1) To monitor co-channel facilities of other licensees sharing an assigned channel or channels with the licensee in the licensee's area of operation; and,

(2) To terminate any transmission(s) or communication(s) between points in the public communications system and the private communications system.

(f) In urban areas, the location of fixed transmitter control points will be specified, "same as transmitter," unless the control point is at a street address which is different from that of the transmitter(s) controlled. In rural areas, the location of fixed control points will be specified, "same as transmitter," unless the control point is more than 500 feet from the transmitter(s) controlled. In the latter case, the approximate location of the control point will be specified in distance and direction from the transmitter(s) controlled in terms of feet and geographical quadrant, respectively. It would be assumed that the location of a fixed control point is the same as the location of the transmitter(s) controlled, unless the applicant includes a request for a different location described in appropriate terms as indicated herein.

(g) [Reserved]

(h) Mobile transmitters shall be assumed to be under the immediate control of the mobile operator; provided, however, overall supervision and control of the operation and use of a communication system may be the responsibility of a fixed control point operator. In general, mobile transmitters shall be equipped to permit the operator to determine when they are radiating "RF" energy or when the transmitter circuits have been placed in a condition to produce such radiation. This may be accomplished either through the use of a carrier operated device or of a pilot lamp or meter which will provide a visual indication when the transmitter is radiating or has been placed in a condition to produce radiation provided, however, that hand-carried or pack-carried transmitters and transmitters installed on motorcycles need not be so equipped.

[43 FR 54791, Nov. 22, 1978; 44 FR 32220, June 5, 1979; 44 FR 34134, June 14, 1979, as amended at 44 FR 67125, Nov. 23, 1979; 48 FR 29517, June 27, 1983; 54 FR 39740, Sept. 28, 1989]

§ 90.465 Control of systems of communication.

(a) Depending on design considerations, control of a system of communication may be exercised in varying
ways. In single frequency
base/mobile operations, cont
be exercised by the control op
the fixed control point. In
relay systems, where there is
ciated control point or contro
control may be exercised by th
tor at the control point or co
tion. In mobile-only systems,
may be exercised by the mobi
tor. In communication system
ing multiple base stations
relays control of the syste
result from a combination of
and considerations, including
by a fixed control point ope
some point within the system
munication or control by the
station operator of the licensee

(b) In internal systems, as de
§ 90.7 control may be maint
conforming the system to the
ments of §§ 90.471 through 90.

(c) In interconnected system
fined at § 90.7 control may b
tained by conforming operat
system design to that perm
§§ 90.477 through 90.483.

[43 FR 54791, Nov. 22, 1978, as am
54 FR 39740, Sept. 28, 1989]

§ 90.467 Dispatch points.

Dispatch points meeting the
ments of this section need not
cifically authorized; provided,
er, that the licensee of any ra
tion operated from a dispatch
points shall assume full respo
for the use and operation of
thorized facilities in complian
all applicable provisions of law
and shall comply with the polic

(a) A dispatch point may be
to the transmitter(s) being o
by private or leased wire line
radio circuits, provided the
ments of § 90.463 are met.

(b) No telephone position
public, switched, telephone
will be treated as a dispatch
within the meaning or intent
section.

(c) Operation of transmitting
ties from dispatch points is pe
only when the control operat
fixed control point in the syste
duty and at no other time.

§ 90.469 Unattended operation.

(a) Subject to the provisions of §§ 90.243, 90.245, and 90.247, mobile relay, fixed relay, and mobile repeater stations are authorized for unattended operation; and the transmitter control point requirements set out at §§ 90.463 through 90.465 shall not apply.

(b) Self-activated transmitters may be authorized for unattended operation where they are activated by either electrical or mechanical devices, provided the licensee adopts reasonable means to guard against malfunctions and harmful interference to other users.

INTERNAL TRANSMITTER CONTROL SYSTEMS

§ 90.471 Points of operation in internal transmitter control systems.

The transmitting facilities of the licensee may be operated from fixed positions located on premises controlled by the licensee. The fixed position may be part of a private telephone exchange or it may be any position in a closed or limited access communications facility intended to be used by employees of the licensee for internal communications and transmitter control purposes. Operating positions in internal transmitter control systems are not synonymous with dispatch points (See § 90.467) nor with telephone positions which are part of the public, switched telephone network; and the scheme of regulation is to be considered and treated as being different. See §§ 90.485 through 90.489.

[44 FR 67125, Nov. 23, 1979]

§ 90.473 Operation of internal transmitter control systems through licensed fixed control points.

An internal transmitter control system may be operated under the control and supervision of a control operator stationed at a fixed control point in the system. In such a case, the control point must be equipped to permit the control operator to monitor all traffic to and from fixed positions and mobile stations or paging units of the licensee; and the system shall be so designed to permit the control operator to either disconnect any operating position in the internal system from the transmitter control circuit or to close the system down entirely at will.

[44 FR 67125, Nov. 23, 1979]

§ 90.475 Operation of internal transmitter control systems in specially equipped systems.

(a) An internal transmitter control system need not be designed to meet the requirements of § 90.473 if it meets the following requirements:

(1) All operating positions must be located on premises controlled by the licensee.

(2) An internal transmitter control system may be used in conjunction with other approved methods of transmitter control and interconnection so long as the internal transmitter control system, itself, is neither accessed from telephone positions in the public switched telephone network, nor used dial-up circuits in the public switched telephone network. Licensees with complex communications systems involving fixed systems whose base stations are controlled by such systems may automatically access these base stations through the microwave or operational fixed systems from positions in the PSTN, so long as the base stations and mobile units meet the requirements of § 90.483 and if a separate circuit is provided for each mode of transmitter operation (*i.e.*, conventional, dial-up or internal).

(3) The system must be designed so that upon completion of a transmission, the base station transmitter(s) will close down automatically within 3 seconds.

(4) To guard against malfunctions, the system must also be designed so that the base station(s) will be deactivated by an automatic timing device when a modulated signal is not transmitted for a period of three (3) consecutive minutes.

(5) The system must include automatic monitoring equipment, installed at the base station transmitter site(s), which will prevent the activation of the system when signals of other cochannel stations are present.

[43 FR 54791, Nov. 22, 1978, as amended at 44 FR 67125, Nov. 23, 1979; 47 FR 17521, Apr. 23, 1982]

INTERCONNECTED SYSTEMS

§ 90.476 Interconnection of fixed stations and certain mobile stations.

(a) Fixed stations and mobile stations used to provide the functions of fixed stations pursuant to the provisions of paragraphs (c)(4) and (c)(36) of § 90.75 and § 90.267 are not subject to the interconnection provisions of § 90.477 and § 90.483 and may be interconnected with the facilities of common carriers.

(b) Mobile stations used to provide the functions of base and mobile relay stations pursuant to the provisions of paragraphs (c)(4) and (c)(36) of § 90.75 and § 90.267 are not subject to the provisions of paragraph (d)(3) of § 90.477 and may be interconnected with the facilities of common carriers subject to the provisions of paragraphs (d)(1), (d)(2) and (e) of § 90.477 and § 90.483.

[50 FR 15152, Apr. 17, 1985]

§ 90.477 Interconnected systems.

(a) Applicants for new land stations to be interconnected with the public switched telephone network must indicate on their applications (class of station code) that their stations will be interconnected. Licensees of land stations that are not interconnected may interconnect their stations with the public switched telephone network only after modifying their license. See § 90.135. In all cases a detailed description of how interconnection is accomplished must be maintained by licensees as part of their station records. See § 90.433.

(b) In the frequency ranges 806-824 MHz, 851-869 MHz, 896-901 MHz, and 935-940 MHz, interconnection with the public switched telephone network is authorized under the following conditions:

(1) Interconnected operation is on a secondary basis to dispatch operation. This restriction will not apply to trunked systems or on any channel assigned exclusively to one licensee.

(2) Interconnection may be accomplished at any location through a separate or shared interconnection device.
When land stations subje
part are multiple licensed o
authorized users, arrange
telephone service must be m
duly authorized carrier by
censees, or their authorized
a non-profit cost sharing b
telephone service costs are
least one licensee participat
cost sharing arrangement m
tain cost sharing records an
must be distributed at lea
year. Licensees, users, or th
ized agents may also make
arrangements with a duly
carrier and arrange that ea
or user pay the carrier direc
licensee's or user's share of
use of the shared telephone
report of the cost distributio
placed in the licensee's stati
and made available to parti
the sharing and the Commis
request. In all cases, arr
with the duly authorized ca
disclose the number of lice
users and the nature of the u

(c) Interconnection of fa
the Radiolocation Service (s
will not be permitted.

(d) In the frequency ran
800 MHz, interconnection
public switched telephone n
authorized under the followi
tions:

(1) Interconnected operati
secondary basis to dispatch
This restriction will not
trunked systems or on any c
signed exclusively to one lice

(2) Interconnection may b
plished at any location thro
arate or shared interconnecti
When land stations subjec
part are multiple licensed or
authorized users, arrangem
telephone service must be ma
duly authorized carrier by
censees, or their authorized
a non-profit cost sharing bas
telephone service costs are s
least one licensee participati
cost sharing arrangement m
tain cost sharing records and
must be distributed at least
year. Licensees, users, or thei
ized agents may also make
arrangements with a duly a
carrier and arrange that each

or user pay the carrier directly for the licensee's or user's share of the joint use of the shared telephone service. A report of the cost distribution must be placed in the licensee's station records and made available to participants in the sharing and the Commission upon request. In all cases, arrangements with the duly authorized carrier must disclose the number of licensees and users and the nature of the use.

(3) In the Special Emergency Radio Service (subpart C of this part), except for medical emergency systems in the 450-470 MHz band, the Business and Special Industrial Radio Services (subpart D of this part), and the Automobile Emergency and Taxicab Radio Services (subpart E of this part), interconnection will be permitted only where the base station site or sites of proposed stations are located 75 miles or more from the designated centers of the urbanized areas listed below. If licensees seek to interconnect in these five services within 75 miles of the 25 cities they must obtain the consent of all co-channel licensees located both within 75 miles of the center of the city; and within 75 miles of the interconnected base station transmitter. The consensual agreements among the co-channel licensees must specifically state the terms agreed upon and a statement must be submitted to the Commission indicating that all co-channel licensees have consented to the use of interconnection. If a licensee has agreed to the use of interconnection on the channel, but later decides against the use of interconnection, the licensee may request that the co-channel licensees reconsider the use of interconnection. If the licensee is unable to reach an agreement with co-channel licensees, the licensee may request that the Commission consider the matter and assign it to another channel. If a new licensee is assigned to a frequency where all the co-channel licensees have agreed to the use of interconnection and the new licensees does not agree, the new licensee may request that the co-channel licensees reconsider the use of interconnection. If the new licensee can not reach an agreement with co-channel licensees it may request that the Commission reassign it to another channel.

Urbanized area	North lattitude	West longitude
New York, NY-northeastern NJ	40°45′06″	73°59′39″
Los Angeles-Long Beach, CA	34°03′15″	118°14′28″
Chicago, IL	41°52′28″	87°38′22″
Philadelphia, PA-New Jersey	39°56′58″	75°09′21″
Detroit, MI	42°19′48″	83°02′57″
San Francisco-Oakland, CA	37°46′39″	122°24′40″
Boston, MA	42°21′24″	71°03′25″
Washington, DC-Maryland-Virginia	38°53′51″	77°00′33″
Cleveland, OH	41°29′51″	81°41′50″
St. Louis, MO-Illinois	38°37′45″	90°12′22″
Pittsburgh, PA	40°26′19″	80°00′00″
Minneapolis-St. Paul, MN	44°58′57″	93°15′43″
Houston, TX	29°45′26″	95°21′37″
Baltimore, MD	39°17′26″	76°36′45″
Dallas, TX	32°47′09″	96°47′37″
Milwaukee, WI	43°02′19″	87°54′15″
Seattle-Everett, WA	47°36′32″	122°20′12″
Miami, FL	25°46′37″	80°11′32″
San Diego, CA	32°42′53″	117°09′21″
Atlanta, GA	33°45′10″	84°23′37″
Cincinnati, OH-Kentucky	39°06′07″	84°30′35″
Kansas City, MO-Kansas	39°04′56″	94°35′20″
Buffalo, NY	42°52′52″	78°52′21″
Denver, CO	39°44′56″	104°59′22″
San Jose, CA	37°20′16″	121°53′24″

(e) Additional frequencies shall not be assigned to enable any licensee to employ a preferred interconnection capability.

(f) Paging systems operating on frequencies in the bands below 800 MHz are not subject to the interconnection provisions of § 90.477(d)(3).

[47 FR 17520, Apr. 22, 1982, as amended at 48 FR 29518, June 27, 1983; 50 FR 15152, Apr. 17, 1985; 51 FR 14998, Apr. 22, 1986; 51 FR 37401, Oct. 22, 1986; 52 FR 15501, Apr. 29, 1987; 52 FR 29856, Aug. 12, 1987; 53 FR 1025, Jan. 15, 1988]

§ 90.483 Permissible methods and requirements of interconnecting private and public systems of communications.

Interconnection may be accomplished either manually or automatically under the supervision and control of a transmitter control operator at a fixed position in the authorized system of communications or it may be accomplished under the supervision and control of mobile operators.

(a) Where a system is interconnected manually at a fixed control point, the control point operator must maintain the capability to turn the carrier of the transmitter off or to de-activate the system completely when circumstances warrant such action.

(b) When the system is interconnected automatically it may be supervised at the control point or in mobile units.

(1) For control point supervision, the following is required:

(i) The control point operator must maintain the capability to turn the carrier of the transmitter off or to deactivate the system completely when circumstances warrant such action.

(ii) When a frequency is shared by more than one system, automatic monitoring equipment must be installed at the base station to prevent activation of the transmitter when signals of co-channel stations are present and activation would interfere with communications in progress. Licensees may operate without the monitoring equipment if they have obtained the consent of all co-channel licensees located within a 75 mile radius of the interconnected base station transmitter. A statement must be submitted to the Commission indicating that all co-channel licensees have consented to operate without the monitoring equipment. If a licensee has agreed that the use of monitoring equipment is not necessary, but later decides that the monitoring equipment is necessary, the licensee may request that the co-channel licensees reconsider the use of monitoring equipment. If the licensee cannot reach an agreement with co-channel licensees, the licensee may request that the Commission consider the matter and assign it to another channel. If a new licensee is assigned to a frequency where all the co-channel licensees have agreed that the use of monitoring equipment is not necessary, and the new licensee does not agree, the new licensee may request the co-channel licensees to reconsider the use of monitoring equipment. If the new licensee cannot reach an agreement with co-channel licensees, it should request a new channel from the Commission. Systems on frequencies above 800 MHz are exempt from this requirement.

(2) For mobile unit supervision, the following is required:

(i) When a frequency is shared by more than one system, automatic monitoring equipment must be installed at each base station to prevent its activation when signals of other co-channel stations are present and
vation would interfere with comm
cations in progress. Licensees may
erate without this equipment if
have obtained the consent of all
channel licensees located within
mile radius of the interconnected
station transmitter. A statement
be submitted to the Commission
cating that all co-channel licens
have consented to operate without
monitoring equipment. If a licen
has agreed that the use of monitor
equipment is not necessary, but
decides that the monitoring equ
ment is necessary, the licensee may
quest that the co-channel licensees
consider the use of monitoring equ
ment. If the licensee cannot reach
agreement with co-channel license
the licensee may request that
Commission consider the matter
assign it to another channel. If a
licensee is assigned to a frequen
where all the co-channel licens
have agreed that the use of moni
ing equipment is not necessary,
the new licensee does not agree,
new licensee may request the co-cha
nel licensees to reconsider the use
monitoring equipment. If the new
censee cannot reach an agreeme
with co-channel licensees, it should
quest a new channel from the Co
mission. Systems above 800 MHz
exempt from this requirement.

(ii) Initial access from points with
the public switched telephone netwo
must be limited to transmission of
second tone, after which time
transmitter shall close down. No add
tional signals may be transmitted un
acknowledgement from a mobile
tion of the licensee is received. Licen
ees are exempt from this requiremen
if they have obained the consent of
co-channel licensees located within
75 mile radius of the interconnecte
base station transmitter. However,
censees may choose to set their ow
time limitations. A statement must
submitted to the Commission indica
ing that all co-channel licensees hav
consented to operate without the mon
itoring equipment. If a licensee ha
agreed that the use of monitorin
equipment is not necessary, but late
decides that the monitoring equipment is necessary, the licensee may re-

quest that the co-channel licensees reconsider the use of monitoring equipment. If the licensee cannot reach an agreement with co-channel licensees, the licensee may request that the Commission consider the matter and assign it to another channel. If a new licensee is assigned to a frequency where all the co-channel licensees have agreed that the use of monitoring equipment is not necessary, and the new licensee does not agree, the new license may request the co-channel licensees to reconsider the use of monitoring equipment. If the new licensee cannot reach an agreement with co-channel licensees, it should request a new channel from the Commission. Systems above 800 MHz are exempt from this requirement.

(c) In single frequency systems, equipment must be installed at the base station which will limit any single transmission from within the public switched telephone network to 30 seconds duration and which in turn will activate the base station receiver to monitor the frequency for a period of not less than three (3) seconds. The mobile station must be capable of terminating the communications during the three (3) seconds. Licensees are exempt from this requirement if they have obtained the consent of all co-channel licensees located within a 75 mile radius of the interconnected base station transmitter. However, licensees may choose to set their own time limitations. A statement must be submitted to the Commission indicating that all co-channel licensees have consented to operate without the monitoring equipment. If a licensee has agreed that the use of monitoring equipment is not necessary, but later decides that the monitoring equipment is necessary, the licensee may request that the co-channel licensees reconsider the use of monitoring equipment. If the licensee cannot reach an agreement with co-channel licensees, the licensee may request that the Commission consider the matter and assign it to another channel. If a new licensee is assigned to a frequency where all the co-channel licensees have agreed to the use of monitoring equipment. If the new licensee cannot reach an agreement with co-channel licensees, it should request a new channel from the Commission.

(d) A timer must be installed at the base station transmitter which limits communications to three (3) minutes. After three (3) minutes, the system must close down, with all circuits between the base station and the public switch telephone network disconnected. This provision does not apply to systems licensed in the Police, Fire, Local Government, Special Emergency Power, Petroleum, Railroad Radio Services, or above 800 MHz. All systems must be equipped with a timer that closes down the transmitter within three minutes of the last transmission. Licensees may operate without these requirements if they have obtained the consent of all co-channel licensees located within a 75 mile radius of the interconnected base station transmitter. However, licensees may choose to set their own time limitations. A statement must be submitted to the Commission indicating that all co-channel licensees have consented to operate without the monitoring equipment. If a licensee has agreed that the use of monitoring equipment is not necessary, but later decides that the monitoring equipment is necessary, the licensee may request that the co-channel licensees reconsider the use of monitoring equipment. If the licensee cannot reach an agreement with co-channel licensees, the licensee may request that the Commission consider the matter and assign it to another channel. If a new licensee is assigned to a frequency where all the co-channel licensees have agreed that the use of monitoring equipment is not necessary, and the new licensee does not agree, the new licensee may request the co-channel licensees to reconsider the use of monitoring equipment. If the new licensee cannot reach a agreement with co-channel licensees, it should request a new channel from the Commission.

[47 FR 17520, Apr. 23, 1982, as amended at 48 FR 29518, June 27, 1983; 50 FR 15153, Apr. 17, 1985]

Subpart P—Paging Operations

§ 90.490 One-way paging operations in the private services.

(a) Subject to specific prohibition or restriction by rule provisions governing the radio service in which a licensee's radio system is authorized, paging operations are permitted:

(1) Where the signals and messages are transmitted by a control operator of the licensee stationed at a licensed control point in the licensee's system of communication.

(2) Where the signals and messages are transmitted from an operating position within an internal system of communication which meets the tests of §§ 90.471 through 90.475.

(3) Where the signals and messages are transmitted from a dispatch point within the licensee's system of communication, as defined as § 90.7.

(b) Systems employing dial-up circuits (§ 90.461(c)) may be used in one-way paging operations, but only where the paging signals are transmitted as provided at paragraph (a)(1) of this section.

(c) Paging may be initiated directly from telephone positions in the public switched telephone network. When land stations are multiple licensed or otherwise shared by authorized users, arrangements for the telephone service must be made with a duly authorized carrier by users, licensees, or their authorized agents on a non-profit, cost-shared basis. When telephone service costs are shared, at least one licensee participating in the cost sharing arrangements must maintain cost sharing records and the costs must be distributed at least once a year. Licensees, users, or their authorized agents may also make joint use arrangements with a duly authorized carrier and arrange that each licensee or user pay the carrier directly for the licensee's or user's share of the joint use of the shared telephone service. A report of the cost distribution must be placed in the licensee's station records and made available to participants in the sharing arrangement and the Commission upon request. In all cases, arrangements with the duly authorized carrier must disclose the number of licensees and users and th of the use.

[47 FR 39509, Sept. 8, 1982, as a 48 FR 56231, Dec. 20, 1983; 52 Apr. 29, 1987]

§ 90.492 One way paging operati 806–824/851–869 MHz and 89 940 MHz bands.

Paging operations are perm these bands only in accorda §§ 90.645(e) and (f).

[54 FR 4030, Jan. 27, 1989]

§ 90.494 One-way paging operati 929–930 MHz band.

(a) The frequencies listed Table are available to all elig 90 users for one-way paging on a shared basis only and wi assigned for the exclusive us licensee. The provisions of § apply to these frequencies.

TABLE

Pool 1 (MHz)	P
929.0125	9
929.0375	9
929.0625	9
929.0875	9
929.1125	9
929.1375	[1] 9
929.1625	[1] 9
929.1875	[1] 9
929.2125	[1] 9
929.2375	[1] 9
929.2625	9
929.2875	9
929.3125	9
929.3275	9
929.4875	9
929.5125	9
929.5375	9
929.5625	9
929.5875	9
929.6125	9

[1] Above Line A this frequency is available onl in Pool 1.

Frequencies listed in Pool 1 are available fo by all eligible Part 90 users except those eligib carrier paging (PCP) licensees.

Frequencies listed in Pool 2 are available onl use by private carrier paging (PCP) licensees.

Frequencies 929.7625 and 929.9875 are shared use in multi-area paging systems by p paging (PCP) licensees.

Frequencies 929.2625 and 929.4875 are avail shared use in multi-area paging systems for all P except private carrier paging (PCP) licensees.

(b) All applications for th quencies must comply with quency coordination requirem § 90.175(c).

(c) Licensees on these frequencies may utilize any type of paging operation desired (tone only, tone-voice, digital, tactile, optical readout, etc.).

(d) Applicants requesting a multi-area paging frequency (929.2625, 929.4875, 929.7625, or 929.9875 MHz) must operate paging systems on this frequency in at least three separate geographical areas within eight months of the date of authorization. If at the end of eight months, systems have not been constructed in three separate geographical areas, authorization cancels automatically. An applicant authorized for multi-area service may also provide local service on this frequency in the authorized areas.

(e) There shall be no minimum or maximum loading standards for these frequencies.

(f) The effective radiated power and antenna height for base stations providing one-way paging service in the frequency band 929-930 MHz must not exceed 1 kilowatt (30 dBw) and 1000 feet above average terrain (AAT), or the equivalent thereof determined from the following table:

Antenna height (AAT) (feet)	Effective radiated power (ERP) (watts)
Above 5,000	65
Above 4,501 to 5,000	65
Above 4,001 to 4,500	70
Above 3,501 to 4,000	75
Above 3,001 to 3,500	100
Above 2,501 to 3,000	140
Above 2,001 to 2,500	200
Above 1,501 to 2,000	350
Above 1,001 to 1,500	600

(g) Except for the channels available for multi-area operation, the channels listed in the Table in paragraph (a) of this section are available as of January 1, 1987, on a shared basis to all persons eligible in both pools under the following conditions:

(1) Channels will be available for inter-pool sharing only if there are no satisfactory frequencies available in the pool in which the applicant is actually eligible.

(2) There are no in-pool users authorized on the frequency in the proposed area of operation.

[47 FR 39510, Sept. 8, 1982, as amended at 50 FR 34470, Aug. 26, 1985; 51 FR 14999, Apr. 22, 1986]

Subpart Q—Developmental Operation

§ 90.501 Scope.

This subpart contains the procedures and requirements for the filing of applications for developmental licenses. It includes special requirements related to developmental operation, restrictions on operations, and special reports required when the development operation is to seek operational data or techniques directed toward the extension of that service.

§ 90.503 Eligibility.

Those persons who are eligible to operate stations in services under this part on a regular basis are also eligible to obtain an authorization for developmental operation in those particular radio services.

§ 90.505 Showing required.

(a) Except as provided in paragraph (b) of this section, each application for developmental operation shall be accompanied by a showing that:

(1) The applicant has an organized plan of development leading to a specific objective;

(2) The actual transmission by radio is essential to proceed beyond the present stage of the program;

(3) The program has reasonable promise of substantial contribution to the expansion or extension of the radio art, or is investigating new unexplored concepts in radio transmission and communications;

(4) The program will be conducted by qualified personnel;

(5) The applicant is legally and financially qualified, and possesses adequate technical facilities to conduct the proposed program; and

(6) The public interest, convenience, and necessity will be served by the proposed operation.

(b) The provisions of paragraph (a) of this section do not apply when an application is made for developmental operation solely for the reason that the frequency requested is restricted to such developmental use.

§ 90.507 Limitations on use.

Stations used for developmental operation shall conform to all technical and operating requirements of subparts I and N of this part, unless specifically exempted in the instrument of authorization.

§ 90.509 Frequencies available for assignment.

Stations engaged in developmental operation may be authorized to use a frequency or frequencies available in the service in which they propose to operate. The number of channels assigned will depend upon the specific requirements of the developmental program and the number of frequencies available in the particular geographical area where the station is to operate.

§ 90.511 Interference.

The operation of any station engaged in developmental work shall not cause harmful interference to the operation of stations regularly licensed under any part of the Commission's rules.

§ 90.513 Special provisions.

(a) The developmental program as described by the application for authorization shall be followed unless the Commission shall otherwise direct.

(b) Where some phases of the developmental program are not covered by the general rules in this chapter and the rules in this part, the Commission may specify additional requirements or conditions as deemed necessary in the public interest, convenience, or necessity.

(c) The Commission may, from time to time, require a station engaged in developmental work to conduct special tests which are reasonable and desirable to the authorized developmental program.

§ 90.515 Change or cancellation of authorization without hearing.

Every application for authority to engage in developmental operation shall be accompanied by a stateme signed by the applicant in which i agreed that any authorization iss pursuant thereto will be accepted w the express understanding of the a plicant that it is subject to change any of its terms or to cancellation its entirety at any time, upon reaso ble notice but without a hearing, if the opinion of the Commission, c cumstances should so require.

§ 90.517 Report of operation.

A report on the results of a develo mental program shall be filed w and made a part of each applicati for renewal of authorization. In ca where no renewal is requested, s report shall be filed within 60 days the expiration of such authorizatio Matters which the applicant does n wish to disclose publicly may be so l beled; they will be used solely for th Commission's information, and w not be publicly disclosed without pe mission of the applicant. The repor shall include comprehensive and de tailed information on:

(a) The final objective.

(b) Results of operation to date.

(c) Analysis of the results obtained

(d) Copies of any published repor

(e) Need for continuation of the pr gram.

(f) Number of hours of operation o each frequency.

This report is not required if the so reason for the developmental author zation is that the frequency of ope ation is restricted to development use only.

Subpart R—Frequency List

§ 90.555 Combined frequency listing.

(a) The following table lists fo ready reference all frequencies assig able under this part. The letter sym bols following each frequency refer t radio services where the frequency i assignable as follows:

INDUSTRIAL SERVICES

IB—Business.
IF—Forest products.
IM—Motion picture.
IP—Petroleum.
IS—Special industrial.

IT—Telephone maintenance.
IW—Power.
IX—Manufacturers.
IY—Relay press.

RADIOLOCATION SERVICE

RS—Radiolocation.

LAND TRANSPORTATION SERVICES

LA—Automobile emergency.
*LI—Interurban passenger.
*LJ—Interurban property.
LR—Railroad.
*LU—Urban passenger.
*LV—Urban property.
LX—Taxicab.

PUBLIC SAFETY SERVICES

PF—Fire.
PH—Highway maintenance.
PL—Local government.
PO—Forestry-conservation.
PP—Police.
PS—Special emergency.

(b) Combined frequency list.

Frequency	Services	Special limitations
KILOHERTZ		
70-90	RS	Radiolocation.
90-1120	RS	Radiolocation.
110-130	RS	Radiolocation.
530	PL	Travelers' information stations.
1610	PL	Do.
1605-1715	RS	Radiolocation.
1610	PP	
1614	IP	
1626	PP	
1628	IP	
1630	PF	
1634	PP	
1642	PP	
1650	PP	
1652	IP	
1658	PP	
1666	PP	
1674	PP	
1676	IP	
1682	PP	
1700	IP	
1706	PP	
1714	PP	
1715-1750	RS	Radiolocation.
1722	PP	
1730	PP	
1750-1800	RS	Radiolocation.
2000-3000	PS,PL,IS,IW,IP,IT	Communications with public coast, disaster communications, long distance circuits.
2212	PO	
2226	PO	
2236	PO	
2244	PO	
2292	IP	
2366	PP	
2382	PP	
2390	PP	
2398	IP	
2406	PP	
2430	PP	
2442	PP	
2450	PP	
2458	PP	
2482	PP	
2490	PP	
2505-3500	PL,PS	State guard.
2726	PL,PS	Do.
3000-10,000	PL,IS,IW,IP,IT	Disaster communications, long distance circuits.
3201	PS	
3230-3400	RS	Radiolocation.
4637.5	IW,IP,IM,IS	
5167.5		Alaska emergency frequency.
10,000-25,000	IS,IW,IP,IT	Long distance circuits.
MEGAHERTZ		
25.02	IP	Geophysical.
25.04	IP	Oil spill.
25.06	IP	Geophysical.
25.08	IP	Oil spill.
25.10	IP	Geophysical.
25.12	IP	
25.14	IF	
25.16	IP	
25.18	IP	
25.20	IP	
25.22	IP	
25.24	IP	
25.26	IP	
25.28	IP	
25.30	IP	
25.32	IP	
27.43	IB	
27.45	IB	
27.49	IB	Itinerant.
27.51	IB	Low power (2 W).
27.53	IB	Do.
29.71	IF	
29.73	IF	
29.75	IF	
29.77	IF	
29.79	IF	
30.565	IB, IF, IM, IP, IS, IT, IW, IX, IY.	Developmental.
30.58	IS	
30.60	IS	
30.62	IS	
30.64	IS	
30.66	IP, LM	
30.68	IF	
30.70	IP	
30.72	IF	

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*Identified collectively in the combined frequency list as "LM."

Frequency	Services	Special limitations
30.74	IP, LM	
30.76	IB	
30.78	IP	
30.80	IB	
30.82	IP, LM	
30.84	IB	Low power (2 W).
30.86	PO, LM	
30.88	IB	
30.90	PO, LM	
30.92	IB	
30.94	PO, LM	
30.96	IB	
30.98	PO, LM	
31.00	IB	
31.02	PO, LM	
31.04	IB	
31.06	PO, LM	
31.08	LM	
31.10	PO, LM	
31.12	LM	
31.14	PO, LM	
31.16	IB	
31.18	PO	State use.
31.20	IB	
31.22	PO	Do.
31.24	IB	
31.26	PO	Do.
31.28	IS	
31.30	PO	Do.
31.32	IS	
31.34	PO	'Do.
31.36	IS	
31.38	PO	Do.
31.40	IS	
31.42	PO	Do.
31.44	IS	
31.46	PO	Do.
31.48	IS, IF	
31.50	PO	Do.
31.52	IS, IF	
31.54	PO	Do.
31.56	IS	
31.58	PO	Do.
31.60	IS	
31.62	PO	Do.
31.64	IS, IF	Do.
31.66	PO	Do.
31.68	IS	
31.70	PO	Do.
31.72	IS, IF	
31.74	PO	Do.
31.76	IS, IF	
31.78	PO	Do.
31.80	IS	
31.82	PO	Do.
31.84	IS	
31.86	PO	Do.
31.88	IS	
31.90	PO	Do.
31.92	IS	
31.94	PO	Do.
31.96	IS	
31.98	PO	Do.
31.99-32.0	PL, PP, PF, PH, PO, PS.	Developmental.
33.0-33.1	PF, PH, PL, PO, PP, PS, LA, LM, LR, LX.	Do.
33.02	PH, PS	
33.04	PS	
33.06	PH, PS	
33.08	PS	
33.10	PH, PS	

Frequency	Services	Special limi
33.12	IS	Low power (2
33.14	IB	Do.
33.16	IB	Maximum po (100 W).
33.18	IP	
33.20	IP	
33.22	IP	
33.24	IP	
33.26	IP	
33.28	IP	
33.30	IP	
33.32	IP	
33.34	IP	
33.36	IP	
33.38	IP	
33.40	IB	Low power (
33.42	PF	Low power (1 W).
33.44	PF	
33.46	PF	Mobile only.
33.48	PF	
33.50	PF	Do.
33.52	PF	
33.54	PF	Do.
33.56	PF	
33.58	PF	Do.
33.60	PF	
33.62	PF	Do.
33.64	PF	
33.66	PF	Do.
33.68	PF	
33.70	PF	
33.72	PF	
33.74	PF	
33.76	PF	
33.78	PF	
33.80	PF	
33.82	PF	
33.84	PF	
33.86	PF	
33.88	PF	
33.90	PF	
33.92	PF	
33.94	PF	
33.96	PF	
33.98	PF	
33.99-34.0	PF, PH, PL, PO, PP, PS.	Developmenta
35.00-35.01	IB, IF, IM, IP, IS, IT, IW, IX, IY.	Do.
35.02	IB, PS	Low power, Handicapp paging.
35.04	IB	Itinerant.
35.06	IB	Maximum po (110 W).
35.08	IB	Do.
35.10	IB	Do.
35.12	IB	Do.
35.14	IB	Do.
35.16	IT	Wireline com carrier.
35.18	IB	Maximum po (110 W).
35.28	IS	
35.32	IS	
35.36	IS	
35.40	IS	
35.44	IS	
35.48	IS	
35.52	IS	
35.64	PS	Paging only.
35.68	PS	Do.

Frequency	Services	Special limitations
35.70	IB	
35.72	IB	
35.74	IS	
35.76	IS	
35.78	IS	
35.80	IS	
35.82	IS	
35.84	IS	
35.86	IS	
35.88	IB	Maximum power (110 W).
35.90	IB	Do.
35.92	IB	Do.
35.94	IB	
35.96	IB	
35.98	IB	
35.99-36.0	IB, IF, IM, IP, IS, IT, IW, IX, IY.	Developmental.
37.0-37.01	IB, IF, IM, IP, IS, IT, IW, IX, IY.	Do.
37.02	PP	Mobile only.
37.04	PP	
37.06	PP	
37.08	PP	
37.10	PL, PP	
37.12	PP	
37.14	PP	
37.16	PP	
37.18	PL, PP	
37.20	PP	
37.22	PP	
37.24	PP	
37.26	PL, PP	
37.28	PP	
37.30	PP	
37.32	PP	
37.34	PP	
37.36	PP	
37.38	PP	
37.40	PP	
37.42	PP	
37.44	IF	
37.46	IW	
37.48	IW	
37.50	IW	
37.52	IW	
37.54	IW	
37.56	IW	
37.58	IW	
37.60	IW	Interconnected utility systems.
37.62	IW	
37.64	IW	
37.66	IW	
37.68	IW	
37.70	IW	
37.72	IW	
37.74	IW	
37.76	IW	
37.78	IW	
37.80	IW	
37.82	IW	
37.84	IW	Do.
37.86	IW	
37.88	IF	
37.90	PH, PS	
37.92	PH	
37.94	PH, PS	
37.96	PH	
37.98	PH, PS	
37.99-38.0	PL, PP, PF, PH, PO, PS.	Developmental.
39.0-39.01	PL, PP, PF, PH, PO, PS.	Do.
39.02	PP	
39.04	PP	
39.06	PL, PP	Low power (2 W).
39.08	PP	
39.10	PL, PP	
39.12	PP	
39.14	PP	
39.16	PP	
39.18	PL, PP	
39.20	PP	
39.22	PP	
39.24	PP	
39.26	PP	Mobile only.
39.28	PP	
39.30	PP	Do.
39.32	PP	
39.34	PP	Do.
39.36	PP	
39.38	PP	Do.
39.40	PP	
39.42	PP	
39.44	PP	
39.46	PP	Intersystems operation.
39.48	PP	
39.50	PL, PP	
39.52	PP	
39.54	PP	
39.56	PP	
39.58	PL, PP	
39.60	PP	
39.62	PP	
39.64	PP	
39.66	PP	Mobile only.
39.68	PP	
39.70	PP	Do.
39.72	PP	
39.74	PP	Do.
39.76	PP	
39.78	PP	Mobile.
39.80	PP	
39.82	PL, PP	
39.84	PP	
39.86	PP	
39.88	PP	
39.90	PL, PP	
39.92	PP	
39.94	PP	
39.96	PP	
39.98	PL, PP	
39.99-40.0	PL, PP, PF, PH, PO, PS.	Developmental.
42.0-42.01	PL, PP, PF, PH, PO, PS.	Do.
42.02	PP	State police.
42.04	PP	Do.
42.06	PP	Do.
42.08	PP	Do.
42.10	PP	Do.
42.12	PP	Do.
42.14	PP	Do.
42.16	PP	Do.
42.18	PP	Do.
42.20	PP	State police (mobile).
42.22	PP	Do.
42.24	PP	Do.
42.26	PP	Do.
42.28	PP	Do.
42.30	PP	Do.
42.32	PP	Do.

Frequency	Services	Special limitations
42.34	PP	Do.
42.36	PP	State police.
42.38	PP	Do.
42.40	PP	State police except Alaska. Meteor burst in Alaska.
42.42	PP	State Police.
42.44	PP	Do.
42.46	PP	Do.
42.48	PP	Do.
42.50	PP	Do.
42.52	PP	Do.
42.54	PP	Do.
42.56	PP	Do.
42.58	PP	Do.
42.60	PP	Do.
42.62	PP	Do.
42.64	PP	Do.
42.66	PP	State police (mobile).
42.68	PP	Do.
42.70	PP	Do.
42.72	PP	Do.
42.74	PP	Do.
42.76	PP	Do.
42.78	PP	Do.
42.80	PP	State police.
42.82	PP	Do.
42.84	PP	Do.
42.86	PP	Do.
42.88	PP	Do.
42.90	PP	Do.
42.92	PP	Do.
42.94	PP	Do.
42.96	IB	Maximum power (100 W).
42.98	IB	Low power (2 W).
43.00	IB	Maximum power (110 W).
43.02	IS, IF	
43.04	IS	Itinerant.
43.06	IS	
43.08	IS	
43.10	IS	
43.12	IS	
43.14	IS	
43.16	IT	
43.18	IS	
43.28	IS, IF	
43.32	IS	
43.36	IS, IF	
43.40	IS, IF	
43.44	IS	
43.48	IS	
43.52	IS, IF	
43.64	PS	1-way paging. Handicapped paging.
43.68	PS	Do.
43.70	LM	Operation between urban areas.
43.72	LM	Do.
43.74	LM	Do.
43.76	LM	Do.
43.78	LM	Do.
43.80	LM	Do.
43.82	LM	Do.
43.84	LM	Do.
43.86	LM	Do.
43.88	LM	Do.
43.90	LM	Do.
43.92	LM	Do.
43.94	LM	Do.
43.96	LM	Do.
43.98	LM	Do.
44.00	LM	Do.
44.02	LM	Do.
44.04	LM	For operation between ur areas.
44.06	LM	Do.
44.08	LM	Do.
44.10	LM	For operation between ur areas excep Alaska. Me burst in Alas
44.12	LM	For operation between ur areas.
44.14	LM	Do.
44.16	LM	Do.
44.18	LM	Do.
44.20	LM	For operation between ur areas excep Alaska. Me burst in Alas
44.24	LM	For operation between ur areas.
44.26	LM	Do.
44.28	LM	Do.
44.30	LM	Do.
44.32	LM	Do.
44.34	LM	Do.
44.36	LM	Do.
44.38	LM	Do.
44.40	LM	Do.
44.42	LM	Do.
44.44	LM	Do.
44.46	LM	Operation with an urban are
44.48	LM	Do.
44.50	LM	Do.
44.52	LM	Do.
44.54	LM	Do.
44.56	LM	Do.
44.58	LM	Do.
44.60	LM	Do.
44.62	PP	State police
44.64	PO	Do.
44.66	PP	
44.68	PO	Do.
44.70	PP	
44.72	PO	Do.
44.74	PP	
44.76	PO	
44.78	PP	State polic (mobile only
44.80	PO	Do.
44.82	PP	Do.
44.84	PO	Do.
44.86	PP	
44.88	PO	Do.
44.90	PP	
44.92	PO	State police.
44.94	PP	
44.96	PO	Do.
44.98	PP	
45.00	PO	Do.
45.02	PP	
45.04	PO	Do.
45.06	PP	

Frequency	Services	Special limitations
4.46	PP	Do.
5.08	PL	
5.10	PP	
5.12	PL	
5.14	PP	
5.16	PL	
5.18	PP	
5.20	PL	
5.22	PP	
5.24	PL	
5.26	PP	Mobile.
5.28	PL	
5.30	PP	Do.
5.32	PL	
5.34	PP	Do.
5.36	PL	
5.38	PP	Do.
5.40	PL	
5.42	PP	
5.44	PL	
5.46	PP	
5.48	PL	
5.50	PP	
45.52	PL	
45.54	PP	
45.56	PL	
45.58	PP	
45.60	PL	
45.62	PP	
45.64	PL	
45.66	PP	
45.68	PH	
45.70	PP	
45.72	PH	
54.74	PP	Do.
45.76	PH	
45.78	PP	Do.
45.80	PH	
45.82	PP	Do.
45.84	PH	
45.86	PP	Intersystem operation.
45.88	PF	Do.
45.90	PP	Intersystem operation except Alaska. Meteor burst in Alaska.
45.92	PS	Intersystem operation.
45.94	PP	Do.
45.96	PS	
45.98	PP	
46.00	PS	
46.02	PP	
46.04	PS	
46.06	PF	
46.08	PF	
46.10	PF	
46.12	PF	
46.14	PF	
46.16	PF	
46.18	PF	
46.20	PF	
46.22	PF	Mobile.
46.24	PF	Do.
46.26	PF	Do.
46.28	PF	Do.
46.30	PF	Maximum power 10 W.
46.32	PF	Mobile.
46.34	PF	Do.
46.36	PF	
46.38	PF	

Frequency	Services	Special limitations
46.40	PF	
46.42	PF	
46.44	PF	
46.46	PF	
46.48	PF	
46.50	PF	
46.52	PL	
46.54	PL	
46.56	PL	
46.58	PL	
47.02	PH	State use.
47.04	PH	Do.
47.06	PH	Do.
47.08	PH	Do.
47.10	PH	Do.
47.12	PH	Do.
47.14	PH	Do.
47.16	PH	Do.
47.18	PH	Do.
47.20	PH	Do.
47.12	PH	Do.
47.14	PH	Do.
47.16	PH	Do.
47.18	PH	Do.
47.20	PH	Do.
47.22	PH	Do.
47.24	PH	Do.
47.26	PH	Do.
47.28	PH	Do.
47.30	PH	Do.
47.32	PH	Do.
47.34	PH	Do.
47.36	PH	Do.
47.38	PH	Do.
47.40	PH	Do.
47.42	PS	Disaster relief.
47.44	IS	
47.46	PS	
47.48	IS	
47.50	PS	
47.52	IS	
47.54	PS	
47.56	IS	
47.58	PS	
47.60	IS	
47.62	PS	
47.64	IS	
47.66	PS	
47 68	IS	
47.70	IW	
47.72	IW	
47.74	IW	
47.76	IW	
47.78	IW	
47.80	IW	
47.82	IW	
47.84	IW	
47.86	IW	
47.88	IW	
47.90	IW	
47.92	IW	
47.94	IW	
47.96	IW	
47.98	IW	
48.00	IW	
48.02	IW	
48.04	IW	
48.06	IW	
48.08	IW	
48.10	IW	
48.12	IW	
48.14	IW	
48.16	IW	

Frequency	Services	Special limitations
48.18	IW	
48.20	IW	
48.22	IW	
48.24	IW	
48.26	IW	
48.28	IW	
48.30	IW	
48.32	IW	
48.34	IW	
48.36	IW	
48.38	IW	
48.40	IW	
48.42	IW	
48.44	IW	
48.46	IW	
48.48	IW	
48.50	IW	
48.52	IW	
48.54	IW	
48.56	IP, IF	
48.58	IP, IF	
48.60	IP, IF	
48.62	IP, IF	
48.64	IP, IF	
48.66	IP, IF	
48.68	IP, IF	
48.70	IP, IF	
48.72	IP, IF	
48.74	IP, IF	
48.76	IP, IF	
48.78	IP, IF	
48.80	IP, IF	
48.82	IP, IF	
48.84	IP, IF	
48.86	IP, IF	
48.88	IP, IF	
48.90	IP, IF	
48.92	IP, IF	
48.94	IP, IF	
48.96	IP, IF	
48.98	IP, IF	
49.00	IP, IF	
49.02	IP, IF	
49.04	IP, IF	
49.06	IP, IF	
49.08	IP, IF	
49.10	IP, IF	
49.12	IP, IF	
49.14	IP, IF	
49.16	IP, IF	
49.18	IP, IF	
49.20	IP, IF	
49.22	IP, IF	
49.24	IP, IF	
49.26	IP, IF	
49.28	IP, IF	
49.30	IP, IF	
49.32	IP, IF	
49.34	IP, IF	
49.36	IP, IF	
49.38	IP, IF	
49.40	IP, IF	
49.42	IP, IF	
49.44	IP, IF	
49.46	IP, IF	
49.48	IP, IF	
49.50	IP, IF	
49.52	IS	
49.54	IF, IS	
49.56	IS	
49.58	IF, IS	

Frequency	Services
72.0-76.0	PL, PP, PF, H, PO, PS, IW, IP IF, IM, IY, IS, IB, IX, LM, LR.
150.775	PS
150.790	PS
150.815	IB, LA
150.830	IB, LA
150.845	IB, LA
150.860	IB, LA
150.875	IB, LA
150.890	IB, LA
150.905	IB, LA
150.920	IB, LA
150.935	IB, LA
150.950	IB, LA
150.965	IB, LA
150.980	IP
150.995	PH, IB
151.010	IB, PH
151.025	PH, IB
151.040	IB, PH
151.055	PH, IB
151.070	IB, PH
151.085	PH, IB
151.100	IB, PH
151.115	PH, IB
151.130	IB, PH
151.145	PO, IB
151.160	IB, PO
151.175	PO, IB
151.190	IB, PO
151.205	PO, IB
151.220	IB, PO
151.235	PO, IB
151.250	IB, PO
151.265	PO, IB
151.280	IB, PO
151.295	PO, IB
151.310	IB, PO
151.325	PO, IB
151.340	IB, PO
151.355	PO, IB
151.370	IB, PO
151.385	PO, IB
151.400	IB, PO
151.415	PO, IB
151.430	IB, PO
151.445	PO, IB
151.460	IB, PO
151.475	PO, IB

Frequency	Services	Special limitations
151.490	PO, IS	IS use not permitted in Puerto Rico and Virgin Islands.
151.505	IS	Interant use.
151.520	IS	
151.535	IS	
151.550	IS	
151.565	IS	
151.580	IS	
151.595	IS	
151.625	IB	Do.
151.655	IB	Maximum power 110 W.
151.685	IB	Do.
151.715	IB	Do.
151.745	IB	Do.
151.775	IB	Do.
151.805	IB	Do.
151.835	IB	Do.
151.865	IB	Do.
151.895	IB	Do.
151.925	IB	
151.955	IB	
151.985	IT	Communications common carrier.
152.0075	PS	1-way paging.
152.270	LX	
152.285	LX	
152.300	IB, LX	For LX use within SMAs over 50.000.
152.315	IB, LX	IB outside, LX inside SMAs over 50,000 pop.
152.330	LX	
152.345	IB, LX	IB outside, LX inside SMAs over 50,000 pop.
152.360	IB, LX	For LX use within SMAs over 50.000.
152.375	IB, LX	IB outside, LX inside SMAs over 50,000 pop.
152.390	LX	
152.405	IB, LX	IB outside, LX inside SMAs over 50,000 pop.
152.420	IB, LX	For LX use within SMAs over 50.000.
152.435	LX	
152.450	LX	
152.465	IF, IS, LX	
152.480	IF, IS, IB	IB 1-way paging.
152.870	IM, IS	
152.885	IS	
152.900	IM, IS	
152.915	IS	
152.930	IM, IS	
152.945	IS	
152.960	IM, IS	
152.975	IS	
152.990	IM, IS	
153.005	IS	
153.020	IM, IS	
153.035	IP, IS	
153.050	IP, IF, IX	
153.065	IP, IF, IX	
153.080	IP, IF, IX	
153.095	IP, IF, IX	
153.110	IP, IF, IX	
153.125	IP, IF, IX	
153.140	IP, IF, IX	
153.155	IP, IF, IX	
153.170	IP, IF, IX	
153.185	IP, IF, IX	
153.200	IP, IF, IX	
153.215	IP, IF, IX	
153.230	IP, IF, IX	
153.245	IP, IF, IX	
153.260	IP, IF, IX	
153.275	IP, IF, IX	
153.290	IP, IF, IX	
153.305	IP, IF, IX	
153.320	IP, IF, IX	
153.335	IP, IF, IX, IS	
153.350	IP, IF, IX, IS	
153.365	IP, IF, IX, IS	
153.380	IP, IF, IX, IS	
153.395	IP, IF, IX, IS	
153.410	IW	
153.425	IW, IP, IF	See limitations for precluded areas.
153.440	IW, IP, IF	Do.
153.455	IW, IP, IF	Do.
153.470	IW	
153.485	IW, IP, IF	Do.
153.500	IW, IP, IF	Do.
153.515	IW, IP, IF	Do.
153.530	IW	
153.545	IW, IP, IF	Do.
153.560	IW, IP, IF	Do.
153.575	IW, IP, IF	Do.
153.590	IW	
153.605	IW, IP, IF	Do.
153.620	IW, IP, IF	Do.
153.635	IW, IP, IF	Do.
153.650	IW	
153.665	IW, IP, IF	Do.
153.680	IW, IP, IF	Do.
153.695	IW	
153.710	IW	
153.725	IW	
153.740	PL	Mobile.
153.755	PL	Do.
153.770	PF	Do.
153.785	PL	Do.
153.800	PL	Do.
153.815	PL	Do.
153.830	PF	Maximum power 10 W.
153.845	PL	Mobile.
153.860	PL	Do.
153.875	PL	Do.
153.890	PF	Do.
153.905	PL	Do.
153.920	PL	Do.
153.935	PL	Do.
153.950	PF	Do.
153.965	PL	Do.
153.980	PL	Do.
153.995	PL	Do.
154.010	PF	Do.
154.025	PL	
154.040	PL	Not available in Puerto Rico and Virgin Islands.
154.055	PL	Do.
154.070	PF	Do.

Frequency	Services	Special limitations
154.085	PL	Do.
154.100	PL	Do.
154.115	PL	Do.
154.130	PF	Do.
154.145	PF	Do.
154.160	PF	Do.
154.175	PF	Do.
154.190	PF	Do.
154.205	PF	Do.
154.220	PF	Do.
154.235	PF	Do.
154.250	PF	Do.
154.265	PF	Do.
154.280	PF	Do.
154.295	PF	Do.
154.310	PF	Do.
154.325	PF	Do.
154.340	PF	Do.
154.355	PF	Do.
154.370	PF	Do.
154.385	PF	Do.
154.400	PF	Do.
154.415	PF	Do.
154.430	PF	Do.
154.445	PF	Do.
154.45625	PL, IW, IP, IF, IS, IB, IX.	Remote control and telemetry.
154.46375	PL, IW, IP, IF, IS, IB, IX.	Do.
154.47125	PL, IW, IP, IF, IS, , IB, IX.	Do.
154.47875	PL, IW, IP, IF, IS, IB, IX.	Do.
154.490	IS	
154.515	IB	Maximum power 110 W.
154.540	IB	Do.
154.570	IF, IB	Low power, 2 W.
154.585	IP	Oil spill 20 W.
154.600	IF, IB	Low power, 2 W.
154.625	IF, IS, IB	IB 1-way paging.
154.650	PP	Mobile.
154.665	PP	State police.
154.680	PP	Do.
154.695	PP	Do
154.710	PP	Mobile.
154.725	PP	
154.740	PP	
154.755	PP	
154.770	PP	Do.
154.785	PP	
154.800	PP	
154.815	PP	
154.830	PP	Do.
154.845	PP	
154.860	PP	
154.875	PP	
154.890	PP	Do.
154.905	PP	State police.
154.920	PP	Do.
154.935	PP	Do.
154.950	PP	Mobile.
154.965	PL	
154.980	PL	
154.995	PL	
155.010	PP	
155.025	PL	
155.040	PL	
155.055	PL	
155.070	PP	
155.085	PL	
155.100	PL	
155.115	PL	

Frequency	Services
155.130	PP
155.145	PL
155.160	PS
155.175	PS
155.190	PP
155.205	PS
155.220	PS
155.235	PS
155.250	PP
155.265	PS
155.280	PS
155.295	PS
155.310	PP
155.325	PS
155.340	PS
155.355	PS
155.370	PP
155.385	PS
155.400	PS
155.415	PP
155.430	PP
155.445	PP
155.460	PP
155.475	PP
155.490	PP
155.505	PP
155.520	PP
155.535	PP
155.550	PP
155.565	PP
155.580	PP
155.595	PP
155.610	PP
155.625	PP
155.640	PP
155.655	PP
155.670	PP
155.685	PP
155.700	PP
155.715	PL
155.730	PP
155.745	PL
155.760	PL
155.775	PL
155.790	PP
155.805	PL
155.820	PL
155.835	PL
155.850	PP
155.865	PL
155.880	PL
155.895	PL
155.910	PP
155.925	PL
155.940	PL
155.955	PL
155.970	PP
155.985	PL
156.000	PL
156.015	PL
156.030	PP

Frequency	Services	Special limitations
158.045	PH	Do.
158.060	PH	Do.
158.075	PH	Do.
158.090	PP	Do.
158.105	PH	
158.120	PH	
158.135	PH	
158.150	PP	Do.
158.165	PH	State use not permitted.
158.180	PH	Do.
158.195	PH	Do.
158.210	PP	
158.225	PH	Do.
158.240	PH	Do.
157.450	PS	1-way paging.
157.470	LA	
157.485	LA	
157.500	LA	
157.515	LA	
157.530	LX	
157.545	LX	
157.560	IB, LX	LX within SMAs over 50,000 pop.
157.575	IB, LX	IB outside, LX inside SMAs over 50,000 pop.
157.590	LX	
157.605	IB, LX	IB outside, LX inside SMAs over 50,000 pop.
157.620	IB, LX	IB LX within SMAs over 50,000 pop.
157.635	IB, LX	IB outside, LX inside SMAs over 50,000 pop.
157.650	LX	
157.665	IB, LX	IB outside, LX inside SMAs over 50,000 pop.
157.680	IB, LX	LX within SMAs over 50,000 pop.
157.695	LX	
157.710	LX	
157.725	IF, IS, LX	
157.740	IF, IS, IB	1-way paging.
158.130	IW	
158.145	IW, IP, IF	See limitations for precluded areas.
158.160	IW, IP, IF	Do.
158.175	IW, IP, IF	Do.
158.190	IW	
158.205	IW, IP, IF	Do.
158.220	IW, IP, IF	Do.
158.235	IW, IP, IF	Do.
158.250	IW	
158.265	IW, IP, IF	Do.
158.280	IP, IF, IX	
158.295	IP, IF, IX	
158.310	IP, IF, IX	
158.325	IP, IF, IX	
158.340	IT	Mobile, communications common carrier.
158.355	IP, IF	
158.370	IP, IF	
158.385	IS	
158.400	IS	Itinerant.
158.415	IP, IF, IX	
158.430	IP, IF, IX	
158.445	IP	Oil spill, mobile.
158.460	IF, IS, IB	1-way paging.
158.730	PP	
158.745	PL	
158.760	PL	
158.775	PL	
158.790	PP	
158.805	PL	
158.820	PL	
158.835	PL	
158.850	PP	
158.865	PL	Mobile.
158.880	PL	Do.
158.895	PL	Do.
158.910	PP	Do.
158.925	PL	Do.
158.940	PL	Do.
158.955	PL	Do.
158.970	PP	Do.
158.985	PH	Mobile, State use not permitted.
159.000	PH	Do.
159.015	PH	Do.
159.030	PP	Mobile.
159.045	PH	Mobile, State use not permitted.
159.060	PH	Do.
159.075	PH	Do.
159.090	PP	
159.105	PH	State use not permitted.
159.120	PH	Do.
159.135	PH	Do.
159.150	PP	
159.165	PH	Do.
159.180	PH	
159.195	PH	
159.210	PP	
159.225	PO	
159.240	PO, IS	IS use in Puerto Rico and Virgin Islands only.
159.255	PO, IS	Do.
159.270	PO, IS	Do.
159.285	PO, IS	Do.
159.300	PO, IS	Do.
159.315	PO, IS	Do.
159.330	PO, IS	Do.
159.345	PO, IS	Do.
159.360	PO, IS	Do.
159.375	PO, IS	Do.
159.390	PO, IS	Do.
159.405	PO, IS	Do.
159.420	PO, IS	Do.
159.435	PO, IS	Do.
159.450	PO	
159.465	PO	
159.480	IP	Oil spill.
159.495	LM	
159.510	LM	
159.525	LM	
159.540	LM	
159.555	LM	
159.570	LM	
159.585	LM	
159.600	LM	
159.615	LM	
159.630	LM	
159.645	LM	

Frequency	Services	Special limitations
159.660	LM	
159.675	LM	
159.690	LM	
159.705	LM	
159.720	LM	
159.735	LM	
159.750	LM	
159.765	LM	
159.780	LM	
159.795	LM	
159.810	LM	
159.825	LM	
159.840	LM	
159.855	LM	
159.870	LM	
159.885	LM	
159.900	LM	
159.915	LM	
159.930	LM	
159.945	LM	
159.960	LM	
159.975	LM	
159.990	LM	
160.005	LM	
160.020	LM	
160.035	LM	
160.050	LM	
160.065	LM	
160.080	LM	
160.095	LM	
160.110	LM	
160.125	LM	
160.140	LM	
160.155	LM	
160.170	LM	
160.185	LM	
160.200	LM	
160.215	LR	
160.230	LR	
160.245	LR	
160.260	LR	
160.275	LR	
160.290	LR	
160.305	LR	
160.320	LR	
160.335	LR	
160.350	LR	
160.365	LR	
160.380	LR	
160.395	LR	
160.410	IS, LR	IS use in Puerto Rico and Virgin Islands only.
160.425	IS, LR	Do.
160.440	IS, LR	Do.
160.455	IS, LR	Do.
160.470	IS, LR	Do.
160.485	IS, LR	Do.
160.500	IS, LR	Do.
160.515	IS, LR	Do.
160.530	IS, LR	Do.
160.545	IS, LR	Do.
160.560	IS, LR	Do.
160.575	IS, LR	Do.
160.590	IS, LR	Do.
160.605	IS, LR	Do.
160.620	LR	
160.635	LR	
160.650	LR	
160.665	LR	
160.680	LR	
160.695	LR	
160.710	LR	
160.725	LR	
160.740	LR	
160.755	LR	
160.770	LR	
160.785	LR	
160.800	LR	
160.815	LR	
160.830	LR	
160.845	LR	
160.860	LR	
160.875	LR	
160.890	LR	
160.905	LR	
160.920	LR	
160.935	LR	
160.950	LR	
160.965	LR	
160.980	LR	
160.995	LR	
161.010	LR	
161.025	LR	
161.040	LR	
161.055	LR	
161.070	LR	
161.085	LR	
161.100	LR	
161.115	LR	
161.130	LR	
161.145	LR	
161.160	LR	
161.175	LR	
161.190	LR	
161.205	LR	
161.220	LR	
161.235	LR	
161.250	LR	
161.265	LR	
161.280	LR	
161.295	LR	
161.310	LR	
161.325	LR	
161.340	LR	
161.355	LR	
161.370	LR	
161.385	LR	Not ava Puert Virgin
161.400	LR	Do.
161.415	LR	Do.
161.430	LR	Do.
161.445	LR	Do.
161.460	LR	Do.
161.475	LR	Do.
161.490	LR	Do.
161.505	LR	Do.
161.520	LR	Do.
161.535	LR	Do.
161.550	LR	Do.
161.565	LR	Do.
161.610	LR	Grandfat only.
163.250	PS	1-way p
166.250	PF	Availabl within New Y
169.425	IW, IP, IF, IS	Hydrolog meteo
169.445	All services except RS.	Wireless microp
169.450	IW, IP, IF, IS, IB, LR.	Hydrolog meteo
169.475	IW, IP, IF, IS, IB, LR.	Do.

Frequency	Services	Special limitations
169.500	IW, IP, IF, IS, IB, LR.	Do.
169.505	All services except RS.	Wireless microphones.
169.525	IW, IP, IF, IS, IB, LR.	Hydrological or meteorological.
170.150	PF	Available only within 150 mis of New York City.
170.225	IW, IP, IF, IS, IB, LR.	Hydrological or meteorological.
170.245	All services except RS.	Wireless microphones.
170.250	IW, IP, IF, IS, IB, LR.	Hydrological or meteorological.
170.275	IW, IP, IF, IS, IB, LR.	Do.
170.300	IW, IP, IF, IS, IB, LR.	Do.
170.305	All services except RS.	Wireless microphones.
170.325	IW, IP, IF, IS, IB, LR.	Hydrological or meteorological.
170.425	PO	State use west of the Mississippi River.
170.475	PO	State use.
170.575	PO	State use west of the Mississippi River.
171.025	IW, IP, IF, IS, IB, LR.	Hydrological or meteorological.
171.045	All services except RS.	Wireless microphones.
171.050	IW, IP, IF, IS, IB, LR.	Hydrological or meteorological.
171.075	IW, IP, IF, IS, IB, LR.	Do.
171.100	IW, IP, IF, IS, IB, LR.	Do.
171.105	All services except RS.	Wireless microphones.
171.125	IW, IP, IF, IS, IB, LR.	Hydrological or meteorological.
171.425	PO	State use east of the Mississippi River.
171.475	PO	State use west of the Mississippi River.
171.575	PO	State use east of the Mississippi River.
171.825	IW, IP, IF, IS, IB, LR.	Hydrological or meteorological.
171.845	All services except RS.	Wireless microphones.
171.850	IW, IP, IF, IS, IB, LR.	Hydrological or meteorological.
171.875	IW, IP, IF, IS, IB, LR.	Do.
171.900	IW, IP, IF, IS, IB, LR.	Do.
171.905	All services except RS.	Wireless microphones.
171.925	IW, IP, IF, IS, IB, LR.	Hydrological or meteorological.
172.225	PO	State use west of the Mississippi River.
172.275	PO	State use east of Mississippi River.
172.375	PO	State use west of Mississippi River.
173.20375	IB, IF, IX, IP, IS, IW, PL.	R/C and Telemetry.
173.2100	IB, IF, IX, IP, IS, IW, PL.	Do.
173.225	IY, IM	
173.2375	IB, IF, IX, IP, IS, IW, PL.	Do.
173.250	IF, IP, IW	See limitations.
173.2625	IB, IF, IX, IP, IS, IW, PL.	R/C and Telemetry.
173.275	IY, IM	
173.2875	IB, IF, IX, IP, IS, IW, PL.	Do.
173.300	IF, IP, IW	See limitations.
173.3125	IB, IF, IX, IP, IS, IW, PL.	R/C and Telemetry.
173.325	IY, IM	
173.3375	IB, IF, IX, IP, IS, IW, PL.	Do.
173.350	IF, IP, IW	See limitations.
173.3625	IB, IF, IX, IP, IS, IW, PL.	R/C and Telemetry.
173.375	IY, IM	
173.3900	IB, IF, IX, IP, IS, IW, PL.	Do.
173.39625	IB, IF, IX, IP, IS, IW, PL.	Do.
216–220	IW, IP, IF, IS, IB, IX, IT.	Telemetry.
420–450	RS	See limitations.
451.025	IW	
451.050	IW	
451.075	IW	
451.100	IW	
451.125	IW	
451.150	IW	
451.175	IW, IP, IF, IT, IX	
451.200	IW	
451.225	IW, IP, IF, IT, IX	
451.250	IW	
451.275	IW, IP, IF, IT, IX	
451.300	IT	
451.325	IT	
451.350	IT	
451.375	IF, IP, IT, IW, IX	
451.400	IT	
451.425	IF, IP, IT, IW, IX	
451.450	IT	
451.475	IF, IP, IT, IW, IX	
451.500	IT	
451.525	IF, IP, IT, IW, IX	
451.550	IP, IF	
451.575	IF, IP, IT, IW, IX	
451.600	IP, IF	
451.625	IF, IP, IT, IW, IX	
451.650	IP, IF	
451.675	IF, IP, IT, IW, IX	
451.700	IP, IF	
451.725	IS	
451.750	IP, IF	
451.775	IS	
451.800	IS	
451.825	IS	
451.850	IS	
451.875	IS	
451.900	IS	
451.925	IS	

Frequency	Services	Special limitations
451.950	IS	
451.975	IS	
452.000	IS	
452.025	IS	
452.050	LX	
452.075	IS	
452.100	LX, IF	
452.125	IS	
452.150	LX	
452.175	IS	
452.200	LX, IF	
452.225	LX, IF	
452.250	LX, IF	
452.275	LX, IF	
452.300	LX	
452.325	LM, LR	
452.350	LX, IF	
452.375	LM, LR	
452.400	LX, IF	
452.425	LM, LR	
452.450	LX, IF	
452.475	LM, LR	
452.500	LX	
452.525	LA	Single frequency simplex.
452.550	LA	
452.550	LA	Do.
452.575	LA	Do.
452.600	LA	Do.
452.625	LM	
452.650	LM	
452.675	LM	
452.700	LM	
452.725	LM	
452.750	LM	
452.775	LM, LR	
452.800	LM	
452.825	LM, LR	
452.850	LM	
452.875	LM, LR	
452.900	LR	
452.925	LR	
452.950	LR	
452.975	IY	
453.000	IY	
453.025	PL	Highway call box and medical telemetry.
453.050	PL, PP, PF, PH, PO.	
453.075	PL	Do.
453.100	PL, PP, PF, PH, PO.	
453.125	PL	Do.
453.150	PL, PP, PF, PH, PO.	
453.175	PL	Do.
453.200	PL, PP, PF, PH, PO.	
453.225	PL	
453.250	PL, PP, PF, PH, PO.	
453.275	PL	
453.300	PL, PP, PF, PH, PO.	
453.325	PL	
453.350	PL, PP, PF, PH, PO.	
453.375	PL	
453.400	PL, PP, PF, PH, PO.	
453.425	PL	

Frequency	Services	
453.450	PL, PP, PF, PH, PO.	
453.475	PL	
453.500	PL, PP, PF, PH, PO.	
453.525	PL	
453.550	PL, PP, PF, PH, PO.	
453.575	PL	
453.600	PL, PP, PF, PH, PO.	
453.625	PL	
453.650	PL, PP, PF, PH, PO.	
453.675	PL	
453.700	PL, PP, PF, PH, PO.	
453.725	PL	
453.750	PL, PP, PF, PH, PO.	
453.775	PL	
453.800	PL, PP, PF, PH, PO.	
453.825	PL	
453.850	PL, PP, PF, PH, PO.	
453.875	PL	
453.900	PL, PP, PF, PH, PO.	
453.925	PL	
453.950	PL, PP, PF, Ph, PO.	
453.975	PL	
454.0–455.0	(2)	
454.000	IP	
455.0–456.0	(3)	
456.025	IW	
456.050	IW	
456.075	IW	
456.100	IW	
456.125	IW	
456.150	IW	
456.175	IF, IP, IT, IW, IX	
456.200	IW	
456.225	IF, IP, IT, IW, IX	
456.250	IW	
456.275	IF, IP, IT, IW, IX	
456.300	IT	
456.325	IT	
456.350	IT	
456.375	IF, IP, IT, IW, IX	
456.400	IT	
456.425	IF, IP, IT, IW, IX	
456.450	IT	
456.475	IF, IP, IT, IW, IX	
456.500	IT	
456.525	IF, IP, IT, IW, IX	
456.550	IP, IF	
456.575	IF, IP, IT, IW, IX	
456.600	IP, IF	
456.625	IF, IP, IT, IW, IX	
456.650	IP, IF	
456.675	IF, IP, IT, IW, IX	
456.700	IP, IF	
456.725	IS	
456.750	IP, IF	
456.775	IS	
456.800	IS	B
456.825	IS	M
456.850	IS	
456.875	IS	
456.900	IS	

Frequency	Services	Special limitations
456.925	IS	Do.
456.950	IS	Do.
456.975	IS	Do.
457.000	IS	Do.
457.025	IS	Do.
457.050	LX	Do.
457.075	IS	Do.
457.100	LX	Do.
457.125	IS	Do.
457.150	LX	Do.
457.175	IS	Do.
457.200	LX	Do.
457.225	LX	Do.
457.250	LX	Do.
457.275	LX	Do.
457.300	LX	Do.
457.325	LM, LR	Do.
457.350	LX	Do.
457.375	LM, LR	Do.
457.400	LX	Do.
457.425	LM, LR	Do.
457.450	LX	Do
457.475	LM, LR	Do
457.500	LX	Do.
457.525	IB	Mobile only 2 W.
457.550	IB	Do.
457.575	IB	Do.
457.600	IB	Do.
457.625	LM	Do
457.650	LM	Do.
457.675	LM	Do.
457.700	LM	Do.
457.725	LM	Do.
457.750	LM	Do.
457.775	LM	Do.
457.800	LM	
457.825	LM, LR	
457.850	LM	
457.875	LM, LR	
457.900	LR	
457.925	LR	
457.950	LR	
457.975	IY	
458.000	IY	
458.025	PL, PS	Highway call box; medical telemetry.
458.050	PL, PP, PF, PH, PO.	
[illegible]	PL, PS	Do.
458.100	PL, PP, PF, PH, PO.	
458.125	PL, PS	Do.
458.150	PL, PP, PF, PH, PO.	
458.175	PL, PS	Do.
458.200	PL, PP, PF, PH, PO.	
458.225	PL	
458.250	PL, PP, PF, PH, PO.	
458.275	PL	
458.300	PL, PP, PF, PH, PO.	
458.325	PL	
458.350	PL, PP, PF, PH, PO.	
458.375	PL	
458.400	PL, PP, PF, PH, PO.	
458.425	PL	
458.450	PL, PP, PF, PH, PO.	
458.475	PL	
458.500	PL, PP, PF, PH, PO.	
458.525	PL	
458.550	PL, PP, PF, PH, PO.	
458.575	PL	
458.600	PL, PP, PF, PH, PO.	
458.625	PL	
458.650	PL, PP, PF, PH, PO.	
458.675	PL	
458.700	PL, PP, PF, PH, PO.	
458.725	PL	
458.750	PL, PP, PF, PH, PO.	
458.775	PL	
458.800	PL, PP, PF, PH, PO.	
458.825	PL	
458.850	PL, PP, PF, PH, PO.	
458.875	PL	
458.900	PL, PP, PF, PH, PO.	
458.925	PL	
458.950	PL, PP, PF, PH, PO.	
458.975	PL	
459.000	IP	Oil spill cleanup.
459.0—460.0	(3)	
460.025	PP	
460.050	PP	
460.075	PP	
460.100	PP	
460.125	PP	
460.150	PP	
460.175	PP	
460.200	PP	
460.225	PP	
460.250	PP	
460.275	PP	
460.300	PP	
460.325	PP	
460.350	PP	
460.375	PP	
460.400	PP	
460.425	PP	
460.450	PP	
460.475	PP	
460.500	PP	
460.525	PP, PF, PS	
460.550	PP, PF, PS	
460.575	PF	
460.600	PF	
460.625	PF	
460.650	IB	20 W, airport use.
460.675	IB	Do.
460.700	IB	Do.
460.725	IB	Do.
460.750	IB	Do.
460.775	IB	Do.
460.800	IB	Do.
460.825	IB	Do.
460.850	IB	Do.
460.875	IB	Do.
460.900	IB	110 W, central station protection.
460.925	IB	Do.
460.950	IB	Do.

Frequency	Services	Special limitations
460.975	IB	Do.
461.000	IB	Do.
461.025	IB	110 W.
461.050	IB	Do.
461.075	IB	Do.
461.100	IB	Do.
461.125	IB	Do.
461.150	IB	Do.
461.175	IB	Do.
461.200	IB	Do.
461.225	IB	Do.
461.250	IB	Do.
461.275	IB	Do.
461.300	IB	Do.
461.325	IB	Do.
461.350	IB	Do.
461.375	IB	Do.
461.400	IB	Do.
461.425	IB	Do.
461.450	IB	Do.
461.475	IB	Do.
461.500	IB	Do.
461.525	IB	Do.
461.550	IB	Do.
461.575	IB	Do.
461.600	IB	Do.
461.625	IB	Do.
461.650	IB	Do.
461.675	IB	Do.
461.700	IB	Do.
461.725	IB	Do.
461.750	IB	Do.
461.775	IB	Do.
461.800	IB	Do.
461.825	IB	Do.
461.850	IB	Do.
461.875	IB	Do.
461.900	IB	Do.
461.925	IB	Do.
461.950	IB	Do.
461.975	IB	Do.
462.000	IB	Do.
462.025	IB	Do.
462.050	IB	Do.
462.075	IB	Do.
462.100	IB	Do.
462.125	IB	Do.
462.150	IB	Do.
462.175	IB	Do.
462.200	IX	
462.225	IX	
462.250	IX	
462.275	IX	
462.300	IX	
462.325	IX	
462.350	IX	
462.375	IX	
462.400	IX	
462.425	IX	
462.450	IX	
462.475	IW, IP, IF, IX, IT	
462.500	IX	
462.525	IW, IP, IF, IX, IT	
462.550	(4)	
462.575	(4)	
462.600	(4)	
462.625	(4)	
462.650	(4)	
462.675	(4)	
462.700	(4)	
462.725	(4)	
462.750	IB	Base only, 1-way paging.
462.775	IB	Do.
462.800	IB	Do.
462.825	IB	Do.
462.850	IB	Do.
462.875	IB	Do.
462.900	IB	Do.
462.925	IB	Do.
462.950	PS	
462.975	PS	
463.000	PS	Med 1.
463.025	PS	Med 2.
463.050	PS	Med 3.
463.075	PS	Med 4.
463.100	PS	Med 5.
463.125	PS	Med 6.
463.150	PS	Med 7.
463.175	PS	Med 8.
463.200	IB	110 W.
463.225	IB	Do.
463.250	IB	Do.
463.275	IB	Do.
463.300	IB	Do.
463.325	IB	Do.
463.350	IB	Do.
463.375	IB	Do.
463.400	IB	Do.
463.425	IB	Do.
463.450	IB	Do.
463.475	IB	Do.
463.500	IB	Do.
463.525	IB	Do.
463.550	IB	Do.
463.575	IB	Do.
463.600	IB	Do.
463.625	IB	Do.
463.650	IB	Do.
463.675	IB	Do.
463.700	IB	Do.
463.725	IB	Do.
463.750	IB	Do.
463.775	IB	Do.
463.800	IB	Do.
463.825	IB	Do.
463.850	IB	Do.
463.875	IB	Do.
463.900	IB	Do.
463.925	IB	Do.
463.950	IB	Do.
463.975	IB	Do.
464.000	IB	Do.
464.025	IB	Do.
464.050	IB	Do.
464.075	IB	Do.
464.100	IB	Do.
464.125	IB	Do.
464.150	IB	Do.
464.175	IB	Do.
464.200	IB	Do.
464.225	IB	Do.
464.250	IB	Do.
464.275	IB	Do.
464.300	IB	Do.
464.325	IB	110 W, local control only
464.350	IB	110 W.
464.375	IB	110 W, local control only
464.400	IB	110 W.
464.425	IB	110 W, local control on
464.450	IB	110 W.
464.475	IB	110 W, local control only

Frequency	Services	Special limitations
464.500	IB	35 W, itinerant use.
464.525	IB	110 W, local control only.
464.550	IB	35 W, itinerant use.
464.575	IB	110 W, local control only.
464.600	IB	110 W.
464.625	IB	Do.
464.650	IB	Do.
464.675	IB	110 W, local control only.
464.700	IB	110 W.
464.725	IB	Do.
464.750	IB	Do.
464.775	IB	110 W, local control only.
464.800	IB	110 W.
464.825	IB	110 W, local control only.
464.850	IB	110 W.
464.875	IB	110 W, local control only.
464.900	IB	110 W.
464.925	IB	110 W, local control only.
464.950	IB	110 W.
464.975	IB	110 W, local control only.
465.000	IB	35 W, 1-way paging.
465.025	PP	
465.050	PP	
465.075	PP	
465.100	PP	
465.125	PP	
465.150	PP	
465.175	PP	
465.200	PP	
465.225	PP	
465.250	PP	
465.275	PP	
465.300	PP	
465.325	PP	
465.350	PP	
465.375	PP	
465.400	PP	
465.425	PP	
465.450	PP	
465.475	PP	
465.500	PP	
465.525	PP, PF, PS	
465.550	PP, PF, PS	
465.575	PF	
465.600	PF	
465.625	PF	
465.650	IB	2 W, airport use.
465.675	IB	Do.
465.700	IB	Do.
465.725	IB	Do.
465.750	IB	Do.
465.775	IB	Do.
465.800	IB	Do.
465.825	IB	Do.
465.850	IB	Do.
465.875	IB	2 W, airport use, telemetry.
465.900	IB	110 W, central station protection.
465.925	IB	Do.
465.950	IB	Do.

Frequency	Services	Special limitations
465.975	IB	Do.
466.000	IB	Do.
466.025	IB	110 W, mobile.
466.050	IB	Do.
466.075	IB	Do.
466.100	IB	Do.
466.125	IB	Do.
466.150	IB	Do.
466.175	IB	Do.
466.200	IB	Do.
466.225	IB	Do.
466.250	IB	Do.
466.275	IB	Do.
466.300	IB	Do.
466.325	IB	Do.
466.350	IB	Do.
466.375	IB	Do.
466.400	IB	Do.
466.425	IB	Do.
466.450	IB	Do.
466.475	IB	Do.
466.500	IB	Do.
466.525	IB	Do.
466.550	IB	Do.
466.575	IB	Do.
466.600	IB	Do.
466.625	IB	Do.
466.650	IB	Do.
466.675	IB	Do.
466.700	IB	Do.
466.725	IB	Do.
466.750	IB	Do.
466.775	IB	Do.
466.800	IB	Do.
466.825	IB	Do.
466.850	IB	Do.
466.875	IB	Do.
466.900	IB	Do.
466.925	IB	Do.
466.950	IB	Do.
466.975	IB	Do.
467.000	IB	Do.
467.025	IB	Do.
467.050	IB	Do.
467.075	IB	Do.
467.100	IB	Do.
467.125	IB	Do.
467.150	IB	Do.
467.175	IB	Do.
467.200	IX	Mobile only.
467.225	IX	Do.
467.250	IX	Do.
467.275	IX	Do.
467.300	IX	Do.
467.325	IX	Do.
467.350	IX	Do.
467.375	IX	Do.
467.400	IX	Do.
467.425	IX	Do.
467.450	IX	Do.
467.475	IF, IP, IT, IW, IX	Do.
467.500	IX	Do.
467.525	IF, IP, IT, IW, IX	Do.
467.550	(4)	
467.575	(4)	Do.
467.600	(4)	Do.
467.625	(4)	Do.
467.650	(4)	Do.
467.675	(4)	Do.
467.700	(4)	Do.
467.725	(4)	Do.
467.750	IB	2W, telemetry.
467.775	IB	Do.

Frequency	Services	Special limitations
467.800	IB	Do.
467.825	IB	Do.
467.850	IB	Do.
467.875	IB	Do.
467.900	IB	Do.
467.925	IB	Do.
467.950	PS	Medical care dispatch.
467.975	PS	Do.
468.000	PS	Med 1.
468.025	PS	Med 2.
468.050	PS	Med 3.
468.075	PS	Med 4.
468.100	PS	Med 5.
468.125	PS	Med 6.
468.150	PS	Med 7.
468.175	PS	Med 8.
468.200	IB	110 W, mobile
468.225	IB	Do.
468.250	IB	Do.
468.275	IB	Do.
468.300	IB	Do.
468.325	IB	Do.
468.350	IB	Do.
468.375	IB	Do.
468.400	IB	Do.
468.425	IB	Do.
468.450	IB	Do.
468.475	IB	Do.
468.500	IB	Do.
468.525	IB	Do.
468.550	IB	Do.
468.575	IB	Do.
468.600	IB	Do.
468.625	IB	Do.
468.650	IB	Do.
468.675	IB	Do.
468.700	IB	Do.
468.725	IB	Do.
468.750	IB	Do.
468.775	IB	Do.
468.800	IB	Do.
468.825	IB	Do.
468.850	IB	Do.
468.875	IB	Do.
468.900	IB	Do.
468.925	IB	Do.
468.950	IB	Do.
468.975	IB	Do.
469.000	IB	Do.
469.025	IB	Do.
469.050	IB	Do.
469.075	IB	Do.
469.100	IB	Do.
469.125	IB	Do.
469.150	IB	Do.
469.175	IB	Do.
469.200	IB	Do.
469.225	IB	Do.
469.250	IB	Do.
469.275	IB	Do.
469.300	IB	Do.
469.325	IB	Do.
469.350	IB	Do.
469.375	IB	Do.
469.400	IB	Do.
469.425	IB	Do.
469.450	IB	Do.
469.475	IB	Do.
469.500	IB	35 W, itinerant.
469.525	IB	110 W, mobile.
469.550	IB	35 W, itinerant.
469.575	IB	110 W, mobile.
469.600	IB	D
469.625	IB	D
469.650	IB	D
469.675	IB	D
469.700	IB	D
469.725	IB	D
469.750	IB	D
469.775	IB	D
469.800	IB	D
469.825	IB	D
469.850	IB	D
469.875	IB	D
469.900	IB	D
469.925	IB	D
469.950	IB	D
469.975	IB	D
470-512	(1)	Availa urba in a with of s
470.0125-470.2675.	(2)	
806-821	All Svcs	Mobile
851-866	All Svcs	Base c
929-930	All Svcs. exc. RS	Base c way
1427-1435	All Svcs. exc RS	Fixed, mob
2450-2500	All Svcs	Base c
2900-3700	RS	See lim
5250-5850	RS	Do
8400-8500	All Svcs. Exc. IB, RS.	Develo
8500-10550	RS	See lim
10550-10680[5]	All Svcs. Exc. RS	
13400-14000	RS	See lim
15700-17700	RS	Do.
23000-24250	RS	Do.
33400-36000	RS	Do.

[1] All services.

[2] Domestic public (Part 22).

[3] Remote or pickup broadcast (Part 74).

[4] General Mobile Radio Service (GMRS) (Part 9

[5] The frequencies in the band 10.55–10.68 GH able for Digital Termination Systems and for internodal links in the Point-to-Point Microwave R ice. No new licenses will be issued under this s current licenses will be renewed.

(Secs. 4(i) and 303(r), Communicati of 1934, as amended, §§ 0.131 and the Commission's Rules and 5 U.S (b)(3)(B) and (d)(3); 47 U.S.C. 154 303)

[43 FR 54791, Nov. 22, 1978]

EDITORIAL NOTE: For FEDERAL REGI tations affecting § 90.555, see the CFR Sections Affected in the Findi section of this volume.

Subpart S—Regulations Governing Licensing and Use of Frequencies in the 806–824, 851–869, 896–901, and 935–940 MHz Bands

§ 90.601 Scope.

This subpart sets out the regulations governing the licensing and operations of all systems operating in the 806-824/851-869 MHz and 896-901/935-940 MHz bands. This subpart also governs the use of frequencies in the 806-821/851-866 MHz bands along the Mexican and Canadian border areas in accordance with existing agreements. It includes eligibility requirements, application procedures, operational and technical standards for stations licensed in these bands. The rules in this subpart are to be read in conjunction with the applicable requirements contained elsewhere in this part; however, in case of conflict, the provisions of this subpart shall govern with respect to licensing and operation in these frequency bands.

[53 FR 12156, Apr. 13, 1988]

APPLICATION FOR AUTHORIZATIONS

§ 90.603 Eligibility.

The following persons are eligible for licensing in the 806-824 MHz, 851-869 MHz, 896-901 MHz, and 935-940 MHz Bands.

(a) Any person eligible for licensing under subparts B, C, D, or E of this part.

(b) Any person proposing to provide communications service to any person eligible for licensing under subparts B, C, D, or E of this part on a not-for-profit, cost-shared basis.

(c) Any person, except wire line telephone common carriers, eligible under this part and proposing to provide on a commercial basis base station and ancillary facilities as a Specialized Mobile Radio System operator, for the use of individuals, Federal Government agencies and persons eligible for licensing under subparts B, C, D, or E of this part.

[47 FR 41032, Sept. 16, 1982, as amended at 51 FR 37402, Oct. 22, 1986; 53 FR 1025, Jan. 15, 1988, 53 FR 12156, Apr. 13, 1988]

§ 90.605 Forms to be used.

Applications for conventional and trunked radio facilities must be prepared on FCC Forms 574 and 574A and must be submitted or filed in accordance with § 90.127.

[51 FR 14999, Apr. 22, 1986]

§ 90.607 Supplemental information to be furnished by applicants for facilities under this subpart.

(a) Where the applicant is a person proposing to provide service to eligibles under this part on a commercial basis, the applicant must supply:

(1) A statement of the planned mode of operation.

(2) A statement certifying that no person not eligible to use the proposed facility for the purposes for which it is to be authorized will be offered or provided service through the licensee's base station facility.

(b) All applicants for conventional radio systems must:

(1) Furnish a list of all radio systems licensed to them or proposed by them within 64 km. (40 mi.) from the location of the base station transmitter site of the facility for which they have applied.

(2) Specify the number of mobile units to be placed in operation upon grant of the authorization and the number of such units that will be placed in operation within 8 months of the date of grant.

(c) All applicants for trunked systems must:

(1) Furnish a list of all radio systems licensed to them within 64 km (40 mi.) from the location of the base station transmitter site of the facility for which they have applied;

(2) Specify the number of vehicular and portable mobile units and control stations to be placed in operation within the term of the license.

(d) Each applicant shall furnish a functional system diagram illustrating the inter-relationship of all stations being applied for, together with technical details including antenna height (AAT), effective radiated power (ERP), the proposed area of coverage, and the signalling methods to be employed.

(e) Except for applicants requesting frequencies in the SMRS category listed in § 90.617(d) and § 90.619, all applicants for frequencies governed by this subpart must comply with the frequency coordination requirements of § 90.175(b).

[47 FR 41032, Sept. 16, 1982, as amended at 49 FR 36377, Sept. 17, 1984; 51 FR 14999, Apr. 22, 1986]

§ 90.609 Special limitations on amendment of applications for assignment or transfer of authorizations for radio systems above 800 MHz.

(a) No application for a conventional or trunked radio system may be amended so as to substitute a new entity except in the following circumstances:

(1) The amendment does not involve a substantial change in the ownership or control of the applicant; or

(2) The changes in the ownership or control of the applicant are involuntary due to the original applicant's insolvency, bankruptcy, incapacity, or death.

(b) A license to operate a conventional or trunked radio system may not be assigned or transferred prior to the completion of construction of the facility. However, the Commission may give its consent to the assignment or transfer of control of such a license prior to the completion of construction where:

(1) The assignment or transfer does not involve a substantial change in ownership or control of the authorized radio facilities; or,

(2) The assignment or transfer is involuntary due to the licensee's insolvency, bankruptcy, incapacity, or death.

(c) Licensees of constructed systems in any category other than the General Category are permitted to make partial assignments of an authorized grant to an applicant proposing to create a new system or to an existing licensee that has loaded its system to 70 mobiles per channel and is expanding that system. An applicant authorized to expand an existing system or to create a new system with frequencies from any category other than the General Category obtained through partial assignment will receive the assignor's existing license expirati date and loading deadline for the f quencies that are assigned. A licen that makes a partial assignment o station's frequencies will not be a thorized to obtain additional freque cies for that station for a period of o year from the date of the partial a signment.

(d) A constructed system in the Ge eral Category that is authorized to o erate in the conventional mode may b combined with an existing syste above 800 MHz authorized to opera in the trunked mode by assignment o an authorized grant of one station t the other only if:

(1) The trunked system is loaded t 70 mobiles per channel;

(2) The purpose of the assignment i to expand the trunked system.

(3) For all trunked systems that a not SMRs, the assignment applicatio must include a statement from th trunked system's own frequency coor dinator verifying that there are n available frequencies in the trunke system's service category in the fre quency bands 806-824/851-869 MH (trunked systems that are SMRs mus submit evidence of existence of a current waiting list for SMRs in the geographic area in lieu of this requirement).

(4) Each application must include a signed statement listing any co-channel licensees (including call signs) located within 70 miles of the primary site of the trunked system verifying that they all have agreed to the proposed trunked use (see § 90.621(c)).

(5) Each application must include a statement of construction and operation signed by the licensee of the conventional system. The statement of construction and operation must include the date of construction, location constructed (coordinates), the date the system was placed in operation (i.e., the date mobiles/portables began to interact with the mobile relay(s)), and a listing of the frequencies that are operational.

(6) All frequencies being trunked together must be located at a primary site.

(7) As a result of the assignment the assignee must have a number of channels that does not exceed one channel

more than its current loading warrants. If, as a result of the assignment, the assignee obtains the maximum number of channels possible (one channel more than current loading warrants), and if the assignee is on the SMR waiting list for the geographic area in which it receives the assignment, the assignee shall forfeit its position on that waiting list.

(8) Each application must be coordinated by one of the three recognized category coordinators above 800 MHz.

(9) The assignee shall receive a new five-year license grant.

[47 FR 41032, Sep. 16, 1982, as amended at 53 FR 12156, Apr. 13, 1988; 55 FR 28029, July 9, 1990]

POLICIES GOVERNING THE PROCESSING OF APPLICATIONS AND THE SELECTION AND ASSIGNMENT OF FREQUENCIES FOR USE IN THE 806–824 MHz, 851–869 MHz, 896–901 MHz, AND 935–940 MHz BANDS

§ 90.611 Processing of applications.

Applications for facilities to operate on the frequencies governed by this subpart will be processed as follows:

(a) All applications will first be considered to determine whether they are substantially complete and acceptable for filing. If so, they will be assigned a file number and put in pending status. If not, they will be returned to the applicant.

(b) All applications in pending status will be processed in the order in which they are received, determined by the date on which the application was received by the Commission in its Gettysburg, PA office, or the address set forth at § 0.401(b) for applications requiring the fees established in part 1, subpart G of this chapter.

(c) Each application will be reviewed to determine whether it can be granted. Applicants for frequencies in the Public Safety, Business, Industrial/Land Transportation, and General Categories must specify the intended frequency (or frequencies) of operation. Applicants for frequencies in the SMRS Category may either specify the intended frequency (or frequencies) of operation in accordance with the provisions of § 90.621 or request the Commission to perform the selection.

(d) Applications for channels in the SMR category that can not be granted due to a lack of available channels in a particular area will be placed on a waiting list for that area. Waiting lists will consist of two groups. The first group will be comprised of applications from existing licensees who, in the area corresponding to the particular waiting list, operate trunked systems with 70 or more mobile units per channel. The second group will be comprised of applications to establish new systems or to obtain additional channels for conventional systems. Applications will be placed in the appropriate group according to filing dates, with the earliest date receiving the highest ranking. All applications in the first group will receive priority over any application in the second group regardless of filing date. When channels become available, the highest ranking application(s) will be granted based on the site specified and the Commission's mileage separation standards. Trunked systems that have had authorized channels canceled due to failure to meet the loading requirements in § 90.631 will not be permitted on the waiting list for a period of 6 months from the date of the issuance of the superseding license.

(e) An application which is dismissed will lose its place in the processing line.

(f) If an application is returned for correction and resubmitted and received by the Commission within 30 days from the date on which it was returned to the applicant, it will retain its place in the processing line. If it is not received within 30 days it will lose its place in the processing line.

[47 FR 41032, Sept. 16, 1982, as amended at 48 FR 51928, Nov. 15, 1983; 49 FR 36377, Sept. 17, 1984; 52 FR 10232, Mar. 31, 1987; 53 FR 12156, Apr. 13, 1988; 54 FR 4030, Jan. 27, 1989; 55 FR 28030, July 9, 1990]

§ 90.613 Frequencies available.

The following table indicates the channel designations of frequencies available for assignment to eligible applicants under this subpart. Frequencies shall be assigned in pairs, with mobile and control station transmitting frequencies taken from the 806-824 MHz band with corresponding base station frequencies being 45 MHz higher and taken from the 851-869 MHz band, or with mobile and control station frequencies taken from the 896-901 MHz band with corresponding base station frequencies being 39 MHz higher and taken from the 935-940 MHz band. Only the base station transmitting frequency of each pair is listed in the table.

TABLE OF 806–821/851–866 MHz CHANNEL DESIGNATIONS

Channel No.	Base frequency (MHz)
1	851.0125
2	.0375
3	.0625
4	.0875
5	.1125
6	.1375
7	.1625
8	.1875
9	.2125
10	.2375
11	.2625
12	.2875
13	.3125
14	.3375
15	.3625
16	.3875
17	.4125
18	.4375
19	.4625
20	.4875
21	.5125
22	.5375
23	.5625
24	.5875
25	.6125
26	.6375
27	.6625
28	.6875
29	.7125
30	.7375
31	.7625
32	.7875
33	.8125
34	.8375
35	.8625
36	.8875
37	.9125
38	.9375
39	.9625
40	.9875
41	852.0125
42	.0375
43	.0625
44	.0875
45	.1125
46	.1375
47	.1625
48	.1875
49	.2125

TABLE OF 806–821/851–866 MHz C
DESIGNATIONS—Continued

Channel No.
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TABLE OF 806–821/851–866 MHz CHANNEL DESIGNATIONS—Continued

Channel No.	Base frequency (MHz)
117	.9125
118	.9375
119	.9625
120	.9875
121	854.0125
122	.0375
123	.0625
124	.0875
125	.1125
126	.1375
127	.1625
128	.1875
129	.2125
130	.2375
131	.2625
132	.2875
133	.3125
134	.3375
135	.3625
136	.3875
137	.4125
138	.4375
139	.4625
140	.4875
141	.5125
142	.5375
143	.5625
144	.5875
145	.6125
146	.6375
147	.6625
148	.6875
149	.7125
150	.7375
151	.7625
152	.7875
153	.8125
154	.8375
155	.8625
156	.8875
157	.9125
158	.9375
159	.9625
160	.9875
161	855.0125
162	.0375
163	.0625
164	.0875
165	.1125
166	.1375
167	.1625
168	.1875
169	.2125
170	.2375
171	.2625
172	.2875
173	.3125
174	.3375
175	.3625
176	.3875
177	.4125
178	.4375
179	.4625
180	.4875
181	.5125
182	.5375
183	.5625

TABLE OF 806–821/851–866 MHz CHANNEL DESIGNATIONS—Continued

Channel No.	Base frequency (MHz)
184	.5875
185	.6125
186	.6375
187	.6625
188	.6875
189	.7125
190	.7375
191	.7625
192	.7875
193	.8125
194	.8375
195	.8625
196	.8875
197	.9125
198	.9375
199	.9625
200	.9875
201	856.0125
202	.0375
203	.0625
204	.0875
205	.1125
206	.1375
207	.1625
208	.1875
209	.2125
210	.2375
211	.2625
212	.2875
213	.3125
214	.3375
215	.3625
216	.3875
217	.4125
218	.4375
219	.4625
220	.4875
221	.5125
222	.5375
223	.5625
224	.5875
225	.6125
226	.6375
227	.6625
228	.6875
229	.7125
230	.7375
231	.7625
232	.7875
233	.8125
234	.8375
235	.8625
236	.8875
237	.9125
238	.9375
239	.9625
240	.9875
241	857.0125
242	.0375
243	.0625
244	.0875
245	.1125
246	.1375
247	.1625
248	.1875
249	.2125
250	.2375

TABLE OF 806–821/851–866 MHz CHANNEL DESIGNATIONS—Continued

Channel No.	Base frequency (MHz)
251	.2625
252	.2875
253	.3125
254	.3375
255	.3625
256	.3875
257	.4125
258	.4375
259	.4625
260	.4875
261	.5125
262	.5375
263	.5625
264	.5875
265	.6125
266	.6375
267	.6625
268	.6875
269	.7125
270	.7375
271	.7625
272	.7875
273	.8125
274	.8375
275	.8625
276	.8875
277	.9125
278	.9375
279	.9625
280	.9875
281	858.0125
282	.0375
283	.0625
284	.0875
285	.1125
286	.1375
287	.1625
288	.1875
289	.2125
290	.2375
291	.2625
292	.2875
293	.3125
294	.3375
295	.3625
296	.3875
297	.4125
298	.4375
299	.4625
300	.4875
301	.5125
302	.5375
303	.5625
304	.5875
305	.6125
306	.6375
307	.6625
308	.6875
309	.7125
310	.7375
311	.7625
312	.7875
313	.8125
314	.8375
315	.8625
316	.8875
317	.9125

TABLE OF 806–821/851–866 MHz C
DESIGNATIONS—Continued

Channel No.
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TABLE OF 806–821/851–866 MHZ CHANNEL DESIGNATIONS—Continued

Channel No.	Base frequency (MHz)
385	.6125
386	.6375
387	.6625
388	.6875
389	.7125
390	.7375
391	.7625
392	.7875
393	.8125
394	.8375
395	.8625
396	.8875
397	.9125
398	.9375
399	.9625
400	.9875
401	861.0125
402	.0375
403	.0625
404	.0875
405	.1125
406	.1375
407	.1625
408	.1875
409	.2125
410	.2375
411	.2625
412	.2875
413	.3125
414	.3375
415	.3625
416	.3875
417	.4125
418	.4375
419	.4625
420	.4875
421	.5125
422	.5375
423	.5625
424	.5875
425	.6125
426	.6375
427	.6625
428	.6875
429	.7125
430	.7375
431	.7625
432	.7875
433	.8125
434	.8375
435	.8625
436	.8875
437	.9125
438	.9375
439	.9625
440	.9875
441	862.0125
442	.0375
443	.0625
444	.0875
445	.1125
446	.1375
447	.1625
448	.1875
449	.2125
450	.2375
451	.2625

TABLE OF 806–821/851–866 MHZ CHANNEL DESIGNATIONS—Continued

Channel No.	Base frequency (MHz)
452	.2875
453	.3125
454	.3375
455	.3625
456	.3875
457	.4125
458	.4375
459	.4625
460	.4875
461	.5125
462	.5375
463	.5625
464	.5875
465	.6125
466	.6375
467	.6625
468	.6875
469	.7125
470	.7375
471	.7625
472	.7875
473	.8125
474	.8375
475	.8625
476	.8875
477	.9125
478	.9375
479	.9625
480	.9875
481	863.0125
482	.0375
483	.0625
484	.0875
485	.1125
486	.1375
487	.1625
488	.1875
489	.2125
490	.2375
491	.2625
492	.2875
493	.3125
494	.3375
495	.3625
496	.3875
497	.4125
498	.4375
499	.4625
500	.4875
501	.5125
502	.5375
503	.5625
504	.5875
505	.6125
506	.6375
507	.6625
508	.6875
509	.7125
510	.7375
511	.7625
512	.7875
513	.8125
514	.8375
515	.8625
516	.8875
517	.9125
518	.9375

TABLE OF 806-821/851-866 MHZ CHANNEL DESIGNATIONS—Continued

Channel No.	Base frequency (MHz)
519	.9625
520	.9875
521	864.0125
522	.0375
523	.0625
524	.0875
525	.1125
526	.1375
527	.1625
528	.1875
529	.2125
530	.2375
531	.2625
532	.2875
533	.3125
534	.3375
535	.3625
536	.3875
537	.4125
538	.4375
539	.4625
540	.4875
541	.5125
542	.5375
543	.5625
544	.5875
545	.6125
546	.6375
547	.6625
548	.6875
549	.7125
550	.7375
551	.7625
552	.7875
553	.8125
554	.8375
555	.8625
556	.8875
557	.9125
558	.9375
559	.9625
560	.9875
561	865.0125
562	.0375
563	.0625
564	.0875
565	.1125
566	.1375
567	.1625
568	.1875
569	.2125
570	.2375
571	.2625
572	.2875
573	.3125
574	.3375
575	.3625
576	.3875
577	.4125
578	.4375
579	.4625
580	.4875
581	.5125
582	.5375
583	.5625
584	.5875
585	.6125
586	[illegible]
587	[illegible]
588	[illegible]
589	[illegible]
590	[illegible]
591	[illegible]
592	[illegible]
593	[illegible]
594	[illegible]
595	[illegible]
596	[illegible]
597	[illegible]
598	[illegible]
599	[illegible]
600	[illegible]
601	[illegible]
602	[illegible]
603	[illegible]
604	[illegible]
605	[illegible]
606	[illegible]
607	[illegible]
608	[illegible]
609	[illegible]
610	[illegible]
611	[illegible]
612	[illegible]
613	[illegible]
614	[illegible]
615	[illegible]
616	[illegible]
617	[illegible]
618	[illegible]
619	[illegible]
620	[illegible]
621	[illegible]
622	[illegible]
623	[illegible]
624	[illegible]
625	[illegible]
626	[illegible]
627	[illegible]
628	[illegible]
629	[illegible]
630	[illegible]
631	[illegible]
632	[illegible]
633	[illegible]
634	[illegible]
635	[illegible]
636	[illegible]
637	[illegible]
638	[illegible]
639	[illegible]
640	[illegible]
641	[illegible]
642	[illegible]
643	[illegible]
644	[illegible]
645	[illegible]
646	[illegible]
647	[illegible]
648	[illegible]
649	[illegible]
650	[illegible]
651	[illegible]
652	[illegible]

TABLE OF 806-821/851-866 MHz CHANNEL DESIGNATIONS—Continued

Channel No.	Base frequency (MHz)
	.7000
	.7125
	.7250
	.7375
	.7500
	.7625
	.7750
	.7875
	.8000
	.8125
	.8250
	.8375
	.8500
	.8625
	.8750
	.8875
	.9000
	.9125
	.9250
	.9375
	.9500
	.9625
	.9750
	.9875
	867.0125
	.0375
	.0500
	.0625
	.0750
	.0875
	.1000
	.1125
	.1250
	.1375
	.1500
	.1625
	.1750
	.1875
	.2000
	.2125
	.2250
	.2375
	.2500
	.2625
	.2750
	.2875
	.3000
	.3125
	.3250
	.3375
	.3500
	.3625
	.3750
	.3875
	.4000
	.4125
	.4250
	.4375
	.4500
	.4625
	.4750
	.4875
	.5125
	.5375
	.5500
	.5625
	.5750

TABLE OF 806-821/851-866 MHz CHANNEL DESIGNATIONS—Continued

Channel No.	Base frequency (MHz)
720	.5875
721	.6000
722	.6125
723	.6250
724	.6375
725	.6500
726	.6625
727	.6750
728	.6875
729	.7000
730	.7125
731	.7250
732	.7375
733	.7500
734	.7625
735	.7750
736	.7875
737	.8000
738	.8125
739	.8250
740	.8375
741	.8500
742	.8625
743	.8750
744	.8875
745	.9000
746	.9125
747	.9250
748	.9375
749	.9500
750	.9625
751	.9750
752	.9875
753	868.0125
754	.0375
755	.0500
756	.0625
757	.0750
758	.0875
759	.1000
760	.1125
761	.1250
762	.1375
763	.1500
764	.1625
765	.1750
766	.1875
767	.2000
768	.2125
769	.2250
770	.2375
771	.2500
772	.2625
773	.2750
774	.2875
775	.3000
776	.3125
777	.3250
778	.3375
779	.3500
780	.3625
781	.3750
782	.3875
783	.4000
784	.4125
785	.4250
786	.4375

TABLE OF 806–821/851–866 MHZ CHANNEL DESIGNATIONS—Continued

Channel No.	Base frequency (MHz)
787	.4500
788	.4625
789	.4750
790	.4875
791	.5000
792	.5125
793	.5250
794	.5375
795	.5500
796	.5625
797	.5750
798	.5875
799	.6000
800	.6125
801	.6250
802	.6375
803	.6500
804	.6625
805	.6750
806	.6875
807	.7000
808	.7125
809	.7250
810	.7375
811	.7500
812	.7625
813	.7750
814	.7875
815	.8000
816	.8125
817	.8250
818	.8375
819	.8500
820	.8625
821	.8750
822	.8875
823	.9000
824	.9125
825	.9250
826	.9375
827	.9500
828	.9625
829	.9750
830	.9875

TABLE OF 896–901/935–940 MHZ CHANNEL DESIGNATIONS

Channel No.	Base frequency (MHz)
1	935.0125
2	.0250
3	.0375
4	.0500
5	.0625
6	.0750
7	.0875
8	.1000
9	.1125
10	.1250
11	.1375
12	.1500
13	.1625

TABLE OF 896–901/935–940 MHZ CHA
DESIGNATIONS—Continued

Channel No.	
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TABLE OF 896-901/935-940 MHZ CHANNEL DESIGNATIONS—Continued

Channel No.	Base frequency (MHz)
81	.0125
82	.0250
83	.0375
84	.0500
85	.0625
86	.0750
87	.0875
88	.1000
89	.1125
90	.1250
91	.1375
92	.1500
93	.1625
94	.1750
95	.1875
96	.2000
97	.2125
98	.2250
99	.2375
100	.2500
101	.2625
102	.2750
103	.2875
104	.3000
105	.3125
106	.3250
107	.3375
108	.3500
109	.3625
110	.3750
111	.3875
112	.4000
113	.4125
114	.4250
115	.4375
116	.4500
117	.4625
118	.4750
119	.4875
120	.5000
121	.5125
122	.5250
123	.5375
124	.5500
125	.5625
126	.5750
127	.5875
128	.6000
129	.6125
130	.6250
131	.6375
132	.6500
133	.6625
134	.6750
135	.6875
136	.7000
137	.7125
138	.7250
139	.7375
140	.7500
141	.7625
142	.7750
143	.7875
144	.8000
145	.8125
146	.8250
147	.8375
148	.8500
149	.8625
150	.8750
151	.8875
152	.9000
153	.9125
154	.9250
155	.9375
156	.9500
157	.9625
158	.9750
159	.9875
160	937.0000
161	.0125
162	.0250
163	.0375
164	.0500
165	.0625
166	.0750
167	.0875
168	.1000
169	.1125
170	.1250
171	.1375
172	.1500
173	.1625
174	.1750
175	.1875
176	.2000
177	.2125
178	.2250
179	.2375
180	.2500
181	.2625
182	.2750
183	.2875
184	.3000
185	.3125
186	.3250
187	.3375
188	.3500
189	.3625
190	.3750
191	.3875
192	.4000
193	.4125
194	.4250
195	.4375
196	.4500
197	.4625
198	.4750
199	.4875
200	.5000
201	.5125
202	.5250
203	.5375
204	.5500
205	.5625
206	.5750
207	.5875
208	.6000
209	.6125
210	.6250
211	.6375
212	.6500
213	.6625
214	.6750

TABLE OF 896-901/935-940 MHZ CHANNEL DESIGNATIONS—Continued

Channel No.	Base frequency (MHz)
215	.6875
216	.7000
217	.7125
218	.7250
219	.7375
220	.7500
221	.7625
222	.7750
223	.7875
224	.8000
225	.8125
226	.8250
227	.8375
228	.8500
229	.8625
230	.8750
231	.8875
232	.9000
233	.9125
234	.9250
235	.937[illegible]
236	.950[illegible]
237	.9625
238	.9750
239	.9875
240	938.0000
241	.0125
242	.0250
243	.0375
244	.0500
245	.0625
246	.0750
247	.0875
248	.1000
249	.1125
250	.1250
251	.1375
252	.1500
253	.1625
254	.1750
255	.1875
256	.2000
257	.2125
258	.2250
259	.2375
260	.2500
261	.2625
262	.2750
263	.2875
264	.3000
265	.3125
266	.3250
267	.3375
268	.3500
269	.3625
270	.3750
271	.3875
272	.4000
273	.4125
274	.4250
275	.4375
276	.4500
277	.4625
278	.4750
279	.4875
280	.5000
281	.5125

TABLE OF 896-901/935-940 MHZ C DESIGNATIONS—Continued

Channel No.
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TABLE OF 896-901/935-940 MHz CHANNEL DESIGNATIONS—Continued

Channel No.	Base frequency (MHz)
349	.3625
350	.3750
351	.3875
352	.4000
353	.4125
354	.4250
355	.4375
356	.4500
357	.4625
358	.4750
359	.4875
360	.5000
361	.5125
362	.5250
363	.5375
364	.5500
365	.5625
366	.5750
367	.5875
368	.6000
369	.6125
370	.6250
371	.6375
372	.6500
373	.6625
374	.6750
375	.6875
376	.7000
377	.7125
378	.7250
379	.7375
380	.7500
381	.7625
382	.7750
383	.7875
384	.8000
385	.8125
386	.8250
387	.8375
388	.8500
389	.8625
390	.8750
391	.8875
392	.9000
393	.9125
394	.9250
395	.9375
396	.9500
397	.9625
398	.9750
399	.9875

[47 FR 41032, Sept. 16, 1982, as amended at 48 FR 51928, Nov. 15, 1983; 51 FR 37402, Oct. 22, 1986; 52 FR 29856, Aug. 12, 1987; 53 FR 1025, Jan. 15, 1988; 54 FR 38681, Sept. 20, 1989; 54 FR 39740, Sept. 28, 1989]

§ 90.615 Frequencies available in the General Category.

(a) Frequencies in the 806-809.750/851-854.750 MHz bands (Channels 1-150) are allocated to the General Category for conventional operations. The frequencies are available to all eligibles under this subpart (see § 90.603) for conventional operations in areas farther than 110 km (68.4 miles) from the U.S./Mexico border and farther than 140 km (87 miles) from the U.S./Canada border.

(b) Frequencies in this category may also be used for trunked operations in these same areas in accordance with the following:

(1) A licensee of a station in the General Category authorized to operate in the conventional mode may apply to operate instead in the trunked mode. A licensee applying to convert its station from the conventional to the trunked mode may apply for a number of channels not to exceed one more channel than its current loading warrants.

(2) Licensees of stations authorized to operate in the conventional mode in the General Category may combine channels with licensees of stations authorized to operate in the conventional mode in any category, including the General Category, to form a trunked system provided that:

(i) Each of the stations licensed for channels that are to be combined is constructed and operating.

(ii) Each application must include a written signed statement from each co-channel licensee located within 70 miles of the primary site of the trunked system verifying that each such licensee has agreed to the proposed trunked use (see § 90.621(c)). The statement(s) should include each licensee's call sign.

(iii) All frequencies being trunked together must be located at a primary site.

(iv) Each application must be coordinated by one of the three recognized category coordinators above 800 MHz.

(v) The combining must result in one of two licensing forms:

(A) Each of the licenses to be combined may be simultaneously modified to result in one licensee for one trunked system, or

(B) Each of the licensees for existing conventional systems that are to be combined to form a trunked system may simultaneously modify their licenses to reflect that they are to be multiple licensed on a new trunked system.

(vi) As a result of the combining, the new trunked system must have a number of channels that does not exceed one channel more than its current loading warrants.

(vii) The surviving licensee(s) receive a new five-year license grant.

(3) General Category frequencies may be used for trunked system expansion in accordance with § 90.621(g).

[55 FR 28030, July 9, 1990]

§ 90.617 Frequencies in the 809.750–824/854.750–869 MHz, and 896–901/935–940 MHz bands available for trunked or conventional system use in non-border areas.

(a) The channels listed in Table 1 and paragraph (a)(1) are available to eligible applicants in the Public Safety Category which consists of the Local Government, Police, Fire, Highway Maintenance, Forestry Conservation, and Special Emergency Radio Services. These frequencies are available in areas farther than 110 km (68.4 miles) from the U.S./Mexican border, and 140 km (87 miles) from the U.S./Canadian border. Specialized Mobile Radio Systems will not be authorized in this category. These channels are available for intercategory sharing as indicated in § 90.621(g).

PUBLIC SAFETY CATEGORY

TABLE 1—806-821/851-866 MHZ BAND CHANNELS (70 CHANNELS)

Group No.	Channel Nos.
209	209-249-289-329-369
210	210-250-290-330-370
211	211-251-291-331-371
218	218-258-298-338-378
219	219-259-299-339-379
220	220-260-300-340-380
229	229-269-309-349-389
230	230-270-310-350-390
231	231-271-311-351-391
238	238-278-318-358-398
239	239-279-319-359-399
240	240-280-320-360-400
Single channels	159, 169, 179, 189, 199, 160, 17u, 180, 190, 200

(1) Channels numbers 601-830 are also available to eligible applicants in the Public Safety Category in areas farther than 110 km (68.4 miles) from the U.S./Mexican border, and
(87 miles) from the U.S./
border. The assignment of the
nels will be done in accorda
the policies defined in the *Re*
Order of Gen. Docket No. 87-
§§ 90.16 and 90.24). The f
channels are available only fo
aid purposes as defined in Gen
No. 87-112: channels 601, 639,
753.

(b) The channels listed in T
are available to eligible appli
the Industrial/Land Transp
Category (consisting of the Po
troleum, Forest Products, Mo
ture, Relay Press, Special In
Manufacturers, Telephone
nance, Motor Carrier, Railroa
cab and Automobile Emergenc
Services). These frequencies a
able in areas farther than 110
miles) from the U.S./Mexico
and farther than 140 km (87.
from the U.S./Canada border.
ized Mobile Radio Systems
will not be authorized in this
except as indicated in § 90.621(

TABLE 2A—INDUSTRIAL/LAND TRA
TION CATEGORY 806-821/851-8
BAND CHANNELS (50 CHANNELS):

Group No.	Chann
212	212-252-2
213	213-253-2
214	214-254-2
215	215-255-2
216	216-256-2
217	217-257-2
Single channels	155, 165, 17 156, 166, 17 157, 167, 17 158, 168, 17

TABLE 2B—INDUSTRIAL/LAND
PORTATION CATEGORY 896-9
940 MHZ BAND CHANNELS (9
NELS):

For multichannel systems ch
may be grouped vertically or h
tally as they appear in the table

Channel Nos.

31-32-33-34-35
36-37-38-39-40
71-72-73-74-75
76-77-78-79-80

111-112-113-114-115
116-117-118-119-120
151-152-153-154-155
156-157-158-159-160
191-192-193-194-195
196-197-198-199-200
231-232-233-234-235
236-237-238-239-240
271-272-273-274-275
276-277-278-279-280
311-312-313-314-315
316-317-318-319-320
351-352-353-354-355
356-357-358-359-360
391-392-393-394-395
396-397-398-399.

(c) The channels listed in Table 3A are available to eligible applicants in the Business Radio Category. This category does not include Specialized Mobile Radio Systems as defined in §90.603(c). These frequencies are available in areas farther than 110 km (68.4 miles) from the U.S./Mexico border and farther than 140 km (87.0 miles) from the U.S./Canada border. These channels are available for inter-category sharing as indicated in §90.621(g).

Table 3A—Business Category 806–821/851–866 MHz Band Channels (50 Channels):

Group No.	Channel Nos.
232	232-272-312-352-392
233	233-273-313-353-393
234	234-274-314-354-394
235	235-275-315-355-395
236	236-276-316-356-396
237	237-277-317-357-397
Single channels	151, 161, 171, 181, 191, 152, 162, 172, 182, 192, 153, 163, 173, 183, 193, 154, 164, 174, 184, 194

TABLE 3B—BUSINESS CATEGORY 896-901/935-940 MHZ BAND CHANNELS (100 CHANNELS):

For multichannel systems, channels may be grouped vertically or horizontally as they appear in the table.

11-12-13-14-15
16-17-18-19-20
51-52-53-54-55
56-57-58-59-60
91-92-93-94-95
96-97-98-99-100
131-132-133-134-135
136-137-138-139-140
171-172-173-174-175
176-177-178-179-180
211-212-213-214-215
216-217-218-219-220
251-252-253-254-255
256-257-258-259-260
291-292-293-294-295
296-297-298-299-300
331-332-333-334-335
336-337-338-339-340
371-372-373-374-375
376-377-378-379-380.

(d) The channels listed in Tables 4A and 4B are available only for eligibles in the SMR category which consists of Specialized Mobile Radio (SMR) stations and eligible end users. This paragraph deals with the assignment of frequencies only in areas farther than 110 km (68.4 miles) from the U.S./Mexico border and farther than 140 km (87 miles) from the U.S./Canada border. See § 90.619 for the assignment of SMR frequencies in these border areas. For stations located within 70 miles of Chicago, channels 401-600 will be assigned in groups as outlined in Table 4C.

TABLE 4A—SMR CATEGORY 806-821/851-866 MHZ BAND CHANNELS (280 CHANNELS):

Group No.	Channel Nos.
201	201-241-281-321-361
202	202-242-282-322-362
203	203-243-283-323-363
204	204-244-284-324-364
205	205-245-285-325-365
206	206-246-286-326-366
207	207-247-287-327-367
208	208-248-288-328-368
221	221-261-301-341-381
222	222-262-302-342-382
223	223-263-303-343-383
224	224-264-304-344-384
225	225-265-305-345-385
226	226-266-306-346-386
227	227-267-307-347-387
228	228-268-308-348-388
401	401-441-481-521-561
402	402-442-482-522-562
403	403-443-483-523-563
404	404-444-484-524-564
405	405-445-485-525-565
406	406-446-485-526-566
407	407-447-487-527-567
408	408-448-488-528-568
409	409-449-489-529-569
410	410-450-490-530-570
411	411-451-491-531-571
412	412-452-492-532-572
413	413-453-493-533-573
414	414-454-494-534-574
415	415-455-495-535-575
416	416-456-496-536-576
417	417-457-497-537-577
418	418-458-498-538-578
419	419-459-499-539-579

TABLE 4A—SMR CATEGORY 806-821/851-866 MHZ BAND CHANNELS (280 CHANNELS):—Continued

Group No.	Channel Nos.
420	420-460-500-540-580
421	421-461-501-541-581
422	422-462-502-542-582
423	423-463-503-543-583
424	424-464-504-544-584
425	425-465-505-545-585
426	426-466-506-546-586
427	427-467-507-547-587
428	428-468-508-548-588
429	429-469-509-549-589
430	430-470-510-550-590
431	431-471-511-551-591
432	432-472-512-552-592
433	433-473-513-553-593
434	434-474-514-554-594
435	435-475-515-555-595
436	436-476-516-556-596
437	437-477-517-557-597
438	438-478-518-558-598
439	439-479-519-559-599
440	440-480-520-560-600

TABLE 4B-SMR CATEGORY 896—901/935—940 MHZ BAND—CHANNELS (200 Channels)

Group No.	Channels Nos.
1	1-2-3-4-5-6-7-8-9-10
21	21-22-23-24-25-26-27-28-29-30
41	41-42-43-44-45-46-47-48-49-50
61	61-62-63-64-65-66-67-68-69-70
81	81-82-83-84-85 86-87-88-89-90
101	101-102-103-104-105-106-107-108-109-110
121	121-122-123-124-125-126-127-128-129-130
141	141-142-143-144-145-146-147-148-149-150
161	161-162-163-164-165-166-167-168-169-170
181	181-182-183-184-185-186-187-188-189-190
201	201-202-203-204-205-206-207-208-209-210
221	221-222-223-224-225-226-227-228-229-230
241	241-242-243-244-245-246-247-248-249-250
261	261-262-263-264-265-266-267-268-269-270
281	281-282-283-284-285-286-287-288-289-290
301	301-302-303-304-305-306-307-308-309-310
321	321-322-323-324-325-326-327-328-329-330
341	341-342-343-344-345-346-347-348-349-340
361	361-362-363-364-365-366-367-388-369-370
381	381-382-383-384-385-386-387-388-389-390

TABLE 4C-SMR CATEGORY—CHICAGO PLAN [2, 3]

Group No.	Channel Nos.
401 [1]	401 through 410
411	411-447-483-519-555
412	412-448-484-520-556
413	413-449-485-521-557
414	414-450-486-522-558
415	415-451-487-523-559
416	416-452-488-524-560
417	417-453-489-525-561
418	418-454-490-526-562
419	419-455-491-527-563
420	420-456-492-528-564
421	421-457-493-529-565
422	422-458-494-530-566
423	423-459-495-531-567
424	424-460-496-532-568
425	425-461-497-533-569
426	426-462-498-534-570
427	427-463-499-535-571
428	428-464-500-536-572
429	429-465-501-537-573
430	430-456-502-538-574
431	431-467-503-539-575
432	432-468-504-540-576
433	433-469-505-541-577
434	434-470-506-542-578
435	435-471-507-543-579
436	436-472-508-544-580
437	437-473-509-545-581
438	438-474-510-546-582
439	439-475-511-547-583
440	440-476-512-548-584
441	441-477-513-549-585
442	442-478-514-550-586
443	443-479-515-551-587
444	444-480-516-552-588
445	445-481-517-553-589
446	446-482-518-554-590
591	591-592-593-594-595
596	596-597-598-599-600

[1] Reserved for contiguous assignments or as a frequency pool for assignments to systems with odd number of channels.

[2] These frequencies will be authorized only in the area encompassed by a 70 mile radius centered at 41°52'28" N. 87°38'22" W.

[3] All stations located beyond the 70 mile distance authorized on or before August 16, 1982 to use these frequencies may continue to do so. Stations beyond the 70 mile distance authorized after August 16, 1982 shall employ frequencies listed in Table 4A subject to the provisions of § 90.621 (b) or (c) as applicable.

[47 FR 41032, Sept. 16, 1982, as amended at 47 FR 51883, Nov. 18, 1982; 51 FR 37404, Oct. 22, 1986; 52 FR 3662, Feb. 5, 1987; 52 FR 29856, Aug. 12, 1987; 53 FR 1026, Jan. 15, 1988; 53 FR 12156, Apr. 13, 1988; 54 FR 38682, Sept. 20, 1989]

§ 90.619 Frequencies available for use in the U.S./Mexico and U.S./Canada border areas.

(a) U.S./Mexico border area. The channels listed in Tables 1-4 are offset 12.5 kHz lower in frequency than those specified in § 90.613. The Chan-

201 mobile frequency will be .000 MHz, followed by Channel 202 811.025 MHz and proceeding with form 25 kHz channeling to Chan- 400 at 815.975 MHz. Base station quencies will be 45 MHz higher in quency. These channels are avail- e for assignment for conventional runked systems only in areas 68.4 es (110 km) or less from the U.S./ xico border. Stations located on Mt. mon, serving the Tucson, AZ area, l only be authorized offset fre- ncies.

) Table 1 lists the channels that available for assignment to eligible licants in the Public Safety Cate- (consisting of the Local Govern- t, Police, Fire, Highway Mainte- ce, Forestry-Conservation, and cial Emergency Radio Services). cialized Mobile Radio Systems RS) will not be authorized in this gory. These channels are available nter-category sharing as indicated 90.621(g).

LE 1—UNITED STATES/MEXICO BORDER PUBLIC SAFETY CATEGORY-85 CHANNELS

Offset group No.	Offset channel Nos.
	241-281-321-361
	202-242-282-322-362
	203-243-283-323-363
	204-244-284-324-364
	205-245-285-325-365
	206-246-286-326-366
	207-247-287-327-367
	208-248-288-328-368
	209-249-289-329-369
	210-250-290-330-370
	211-251-291-331-371
	401-441-481-521-561
	403-443-483-523-563
	405-445-485-525-565
	407-447-487-527-567
	409-449-489-529-569
	411-451-491-531-571

t Group 201 is available for conventional system . Offset Channel 201 is not available for use in the xico border area.

Table 2 lists the channels that vailable for assignment to eligible cants in the Industrial/Land sportation Category (consisting e Power, Petroleum, Forest Prod- Motion Pictures, Relay Press, al Industrial, Manufacturers, hone Maintenance, Motor Carri- ailroad, Taxicab and Automobile gency Radio Services). Specialized Mobile Radio Systems (SMRS) will not be authorized in this category except as indicated in § 90.621(g).

TABLE 2—UNITED STATES/MEXICO BORDER AREA, INDUSTRIAL/LAND TRANSPORTATION CATEGORY-60 CHANNELS

Offset group No.	Offset channel Nos.
212	212-252-292-332-372
213	213-253-293-333-373
214	214-254-294-334-374
215	215-255-295-335-375
216	216-256-296-336-376
217	217-257-297-337-377
218	218-258-298-338-378
219	219-259-299-339-379
413	413-453-493-533-573
415	415-455-495-535-575
417	417-457-497-537-577
419	419-459-499-539-579

(3) Table 3 lists the channels that are available for assignment to eligible applicants in the Business Radio Category. This category does not include Specialized Mobile Radio Systems as defined in § 90.603(c). These channels are available for inter-category sharing as indicated in § 90.621(g).

TABLE 3—UNITED STATES/MEXICO BORDER AREA, BUSINESS CATEGORY-60 CHANNELS

Offset group No.	Offset channel Nos.
220	220-260-300-340-380
221	221-261-301-341-381
222	222-262-302-342-382
223	223-263-303-343-383
224	224-264-304-344-384
225	225-265-305-345-385
226	226-266-306-346-386
227	227-267-307-347-387
421	421-461-501-541-581
423	423-463-503-543-583
425	425-465-505-545-585
427	427-467-507-547-587

(4) Table 4 lists the channels that are available for assignment for the SMRS Category (consisting of Specialized Mobile Radio Systems (SMRS) as defined in § 90.603(c)). These channels are available for inter-category sharing as indicated in § 90.621(g).

TABLE 4—UNITED STATES/MEXICO BORDER AREA, SMRS CATEGORY-95 CHANNELS

Offset group No.	Offset channel Nos.
228	228-268-308-348-388
229	229-269-309-349-389
230	230-270-310-350-390
231	231-271-311-351-391
232	232-272-312-352-392
233	233-273-313-353-393
234	234-274-314-354-394
235	235-275-315-355-395
236	236-276-316-356-396
237	237-277-317-357-397
238	238-278-318-358-398
239	239-279-319-359-399
240	240-280-320-360-400
429	429-469-509-549-589
431	431-471-511-551-591
433	433-473-513-553-593
435	435-475-515-555-595
437	437-477-517-557-597
439	439-479-519-559-599

(b) *U.S./Canada border area.* The following criteria shall govern the assignment of frequency pairs (channels) for stations located in the U.S./Canada border area. These channels are available for assignment for conventional or truncked systems in accordance with all applicable sections of this subpart. They are available for inter-category sharing as indicated in § 90.621(g).

(1) The U.S./Canada border area is divided into eight geographical regions with U.S. channel allocations shown in Table 5.

TABLE 5—GEOGRAPHICAL REGIONS

Region	Location (longitude)	U.S. channel allocation
1	66° W-71° W (0-100 km from border)	300
2	71° W-81° W (0-100 km from border)	180
3	81° W-85° W (0-100 km from border)	420
4	85° W-121° -30′ W (0-100 km from border).	300

TABLE 5—GEOGRAPHICAL REGIONS—Continued

Region	Location (longitude)	U.S. channel allocation
5	121°-30′ W 127° W(0-140 km from border).	300
6	127° W-143° W (0-100 km from border).	300
7	66° W-121° -30′ W (100-140 km from border).	600
8	127° W-143° W (100-140 km from border).	600

(2) Station authorizations in Regions 1-4 and Regions 6-8 will be subject to Effective Radiated Power (ERP) and Effective Antenna Height (EAH) limitations as indicated in Table 6. Stations in Region 5 will be subject to the ERP and antenna height above mean sea level limitations in Table 8. Effective Radiated Power (ERP) is defined as the product of the power supplied to the antenna and its gain relative to a half-wave dipole in a given direction. Effective Antenna Height is calculated by subtracting the Assumed Average Terrain Elevation (AATE) given in Table 7 from the antenna height above mean sea level.

TABLE 6—LIMITS OF EFFECTIVE RADIATED POWER (ERP) CORRESPONDING TO EFFECTIVE ANTENNA HEIGHTS (EAH) OF BASE STATIONS IN REGIONS 1, 2, 3, 4, 6, 7, 8

Feet	Meters	Watts (maximum)
0-500	0-152	500
501-1000	153-305	125
1001-1500	306-457	40
1501-2000	458-609	20
2001-2500	610-762	10
2501-3000	763-914	10
3001-3500	915-1066	5
3501-4000	1067-1219	5
Above 4000	Above 1219	5

e 7. Values of Assumed Average Terrain Elevation (AATE) Along the U.S./Canada Border

Longitude (ϕ) (°West)	Latitude (θ) (°North)	Assumed Average Terrain Elevation	
		Feet	Meters
$65 \le \phi < 69$	$\theta < 45$	0	0
"	$45 \le \theta < 46$	300	91
"	$\theta \ge 46$	1000	305
$69 \le \phi < 73$	all	2000	609
$73 \le \phi < 74$	"	500	152
$74 \le \phi < 78$	"	250	76
$78 \le \phi < 80$	$\theta < 43$	250	76
"	$\theta \ge 43$	500	152
$80 \le \phi < 90$	all	600	183
$90 \le \phi < 98$	"	1000	305
$98 \le \phi < 102$	"	1500	457
$102 \le \phi < 108$	"	2500	762
$108 \le \phi < 111$	"	3500	1066
$111 \le \phi < 113$	"	4000	1219
$113 \le \phi < 114$	"	5000	1524
$114 \le \phi < 121.5$	"	3000	914
$21.5 \le \phi < 127$	"	0	0
↑ $\phi \ge 127$ Alaska - British olumbia/Yukon erritory Border) ↓	$54 \le \theta < 56$	0	0
	$56 \le \theta < 58$	500	152
	$58 \le \theta < 60$	0	0
	$60 \le \theta < 62$	4000	1219
	$62 \le \theta < 64$	1600	488
	$64 \le \theta < 66$	1000	305
	$66 \le \theta < 68$	750	228
	$68 \le \theta < 69.5$	1500	457
	$\theta \ge 69.5$	0	0

8—LIMITS OF EFFECTIVE RADIATED ER (ERP) CORRESPONDING TO ANTENNA HTS ABOVE MEAN SEA LEVEL OF BASE IONS IN REGION 5

na height above mean sea level		ERP watts (maximum)
Feet	Meters	
	0 to 503	500
,000	504 to 609	350
,500	610 to 762	200
,000	763 to 914	140
,500	915 to 1,066	100
,000	1,067 to 219	75
,500	1,220 to 1,371	70
,000	1,372 to 1,523	65
00	Above 1,523	5

(3) The following frequency bands are available in each Region with the exception of those listed in § 90.619(b)(5).

Region(s)	Frequency bands (MHz)
1, 4, 5, 6	806.00–809.75/851.00–854.75 and 817.25–821.00/862.25–866.00.
2	806.00–808.25/851.00–853.25 and 818.75–821.00/863.75–866.00.
3	806.00–811.25/851.00–856.25 and 815.75–821.00/860.75–866.00.
7, 8	806.00–821.00/851.00–866.00.

(4) Coordination with Canada will be required:

(i) For frequencies in the 808.2625-809.7375/853.2625-854.7375 MHz and

817.2625-818.7375/862.2625-863.7375 MHz bands, for stations to be located in the geographical area in Region 1 enclosed by the United States border, the meridian 71° W and the line beginning at the intersection of 44°25′N, 71° W, then running by great circle arc to the intersection of 45° N, 70° W, then North along meridian 70° W to the intersection of 45°45′N, then running West along 45°45′N to the intersection of the United States—Canada border.

(ii) For frequencies in the 808.2625-811.2375/853.2625-856.2375 MHz and 815.7625-818.7375/860.7625-863.7375 MHz bands, for stations to be located in the geographical area in Region 3 enclosed by the meridian 81° W longitude, the arc of a circle of 100 km radius centered at the intersection of 81° W longitude and the northern shore of Lake Erie and drawn clockwise from the southerly intersection with 81° W longitude to intersect the United States-Canada border, and the United States-Canada border.

(5) No authorizations will be made in the frequency bands in the geographical areas listed below:

Frequency bands (MHz)	Areas
852-856.25	Between 42°30′N and 43°30′N and within 10km of the border, and West of 82° W.
852-853.25	Between 43°N and 43′20′N and within 10 k of the border, and East of 80° W.
864-866	Between 42°55′N and 43°20′N and within 15 km of the border, and East of 81° W.
851-852	Between 74°20′W and 72°55′W and within 10 km of the border.
852-853.25	Between 75°20′W and 74°05′W and within 10 km of the border.
864-866	Between 75°30′W and 74°55′W and within 10 km of the border.
851-852	Between 72°10′W and 71°25′W and within 10 km of the border.
852-854.75	Within 10 km of the border West of 121°55′W longitude and North of 48°25′N latitude, excluding the Alaska-British Columbia/Yukon Territory border.

(6) Two Canadian television stations provide service in British Columbia in the band 806-890 MHz in accordance with U.S./Canadian Television Agreement of 1952. They are:

Enderby, B.C.	Channel 72	818-824 MHz
Radium/Hot Springs, B.C.	Channel 77	848-854 MHz

Until reassignment of these stations they must be protected as follows: the field strength of an interfering mobile radio signal at the station's calculated B contour (where the protected contour crosses the border, that portion of the border lying within the contour shall be treated as the relevant segment of the B contour) may not exceed 14 dBu for frequencies co-channel with the television channel utilized, and may not exceed 54 dBu in the two adjacent 6 MHz guard bands. The field strength of any interfering signal must be calculated using the FCC Report R-6602 F(50,10) propagation curves at a receiving effective antenna height of 30 feet (9.1 meters).

(7) Frequencies in Regions 1-8 are designated in accordance with the following:

(i) As shown in § 90.613, mobile and control station transmitting frequencies will commence with Channel No. 1 at 806.0125 MHz, followed by Channel No. 2 at 806.0375 MHz and proceed with uniform 25 kHz spacing to the band end, with Channel No. 600 at 820.9875 MHz. Corresponding base station frequencies, separated by 45 MHz from the mobile control frequencies will commence with Channel No. 1 at 851.0125 MHz and end with Channel No. 600 at 865.9875 MHz.

(ii) Channels will be arranged into 5-channel groups. Because of the distribution and differing number of channels available for United States use in Regions 1-8, channel spacing between channels in a 5-channel group vary as follows:

Region	Number of 5-channel groups	Spacing between channels in a 5-channel group (Channels
1, 4, 5, 6	60	[illegible]
2	36	[illegible]
3	[1]80	[illegible]
7, 8	120	[illegible]

gion 3 also has ten (10) contiguous channels in each
two allocated sub-bands.

i) The Public Safety Category con-
s of the Local Government, Police,
, Highway Maintenance, Forestry-
servation and Special Emergency
lio Services. The Industrial/Land
nsportation Category consists of
Power, Petroleum, Forest Prod-
, Motion Picture, Relay Press, Spe-
Industrial, Manufacturers, Tele-
ne Maintenance, Motor Carrier,
road, Taxicab, and Automobile
ergency Radio Services. The Busi-
Radio Category consists of the
ness Radio Service. Specialized
ile Radio Systems (SMRS) will
be authorized in any of the above
tioned categories, but only in the
RS Category to those applicants el-
e under § 90.603(c).

Tables 9, 10, 11, and 12 list the
nels available in Regions 1, 4, 5,
6 for the categories of users indi-
l. Frequencies are given in
813.

BLE 9—PUBLIC SAFETY CATEGORY—85 CHANNELS

[Regions 1, 4, 5, 6]

Group No.	Channel No.
	1-31-61-91-121
	2-32-62-92-122
	3-33-63-93-123
	4-34-64-94-124
	5-35-65-95-125
	6-36-66-96-126
	7-37-67-97-127
	8-38-68-98-128
	9-39-69-99-129
	10-40-70-100-130
	11-41-71-101-131
	12-42-72-102-132
	13-43-73-103-133
	14-44-74-104-134
	15-45-75-105-135
	16-46-76-106-136
	17-47-77-107-137

TABLE 10—INDUSTRIAL/LAND SPORTATION CATEGORY—60 CHANNELS

[Regions 1, 4, 5, 6]

TABLE 10—INDUSTRIAL/LAND TRANSPORTATION CATEGORY—60 CHANNELS—Continued

[Regions 1, 4, 5, 6]

Group No.	Channel No.
	18-48-78-108-138
	19-49-79-109-139
	20-50-80-110-140
	21-51-81-111-141
	22-52-82-112-142
	23-53-83-113-143
24	24-54-84-114-144
25	25-55-85-115-145
26	26-56-86-116-146
27	27-57-87-117-147
28	28-58-88-118-148
29	29-59-89-119-149

TABLE 11—BUSINESS CATEGORY—60 CHANNELS

[Regions 1, 4, 5, 6]

Group No.	Channel No.
451	451-481-511-541-571
452	452-482-512-542-572
453	453-483-513-543-573
454	454-484-514-544-574
455	455-485-515-545-575
456	456-486-516-546-576
457	457-487-517-547-577
458	458-488-518-548-578
459	459-489-519-549-579
460	460-490-520-550-580
461	461-491-521-551-581
462	462-492-522-552-582

TABLE 12—SMRS CATEGORY—95 CHANNELS

[Regions 1, 4, 5, 6]

Group No.	Channel No.
30	30-60-90-120-150
463	463-493-523-553-583
464	464-494-524-554-584
465	465-495-525-555-585
466	466-496-526-556-586
467	467-497-527-557-587
468	468-498-528-558-588
469	469-499-529-559-589
470	470-500-530-560-590
471	471-501-531-561-591
472	472-502-532-562-592
473	473-503-533-563-593
474	474-504-534-564-594
475	475-505-535-565-595
476	476-506-536-566-596
477	477-507-537-567-597
478	478-508-538-568-598
479	479-509-539-569-599
480	480-510-540-570-600

(9) Tables 13, 14 15, and 16 list the frequencies available in Region 2 for the categories of users indicated.

TABLE 13—PUBLIC SAFETY CATEGORY—50 CHANNELS

[Region 2]

Group No.	Channel Nos.
1	1-19-37-55-73
2	2-20-38-56-74
3	3-21-39-57-75
4	4-22-40-58-76
5	5-23-41-59-77
6	6-24-42-60-78
7	7-25-43-61-79
8	8-26-44-62-80
9	9-27-45-63-81
10	10-28-46-64-82

TABLE 14—INDUSTRIAL/LAND TRANSPORTATION CATEGORY—35 CHANNELS

[Region 2]

Group No.	Channel Nos.
11	11-29-47-65-83
12	12-30-48-66-84
13	13-31-49-67-85
14	14-32-50-68-86
15	15-33-51-69-87
16	16-34-52-70-88
17	17-35-53-71-89

TABLE 15—BUSINESS CATEGORY—35 CHANNELS

[Region 2]

Group No.	Channel Nos.
511	511-529-547-565-583
512	512-530-548-566-584
513	513-531-549-567-585
514	514-532-550-568-586
515	515-533-551-569-587
516	516-534-552-570-588
517	517-535-553-571-589

TABLE 16—SMRS CATEGORY—60 CHANNELS

[Region 2]

Group No.	Channel Nos.
18	18-36-54-72-90
518	518-536-554-572-590
519	519-537-555-573-591
520	520-538-556-574-592
521	521-539-557-575-593
522	522-540-558-576-594
523	523-541-559-577-595
524	524-542-560-578-596
525	525-543-561-579-597
526	526-544-562-580-598
527	527-545-563-581-599
528	528-546-564-582-600

(10) Tables 17, 18, 19, and 20 list the frequencies available in Region 3 for the categories of users indicated.

TABLE 17—PUBLIC SAFETY—115 CHANNELS

[Region 3]

Group No.	Channel Nos.
1	1-41-81-121-
2	2-42-82-122-
3	3-43-83-123-
4	4-44-84-124-
5	5-45-85-125-
6	6-46-86-126-
7	7-47-87-127-
8	8-48-88-128-
9	9-49-89-129-
10	10-50-90-130-
11	11-51-91-131-
12	12-52-92-132-
13	13-53-93-133-
14	14-54-94-134-
15	15-55-95-135-
16	16-56-96-136-
17	17-57-97-137-
18	18-58-98-138-
19	19-59-99-139-
20	20-60-100-140-
21	21-61-101-141-
22	22-62-102-142-
Contiguous channels	201, 202, 203, 204,

TABLE 18—INDUSTRIAL/LAND TRANSPORTATION CATEGORY—85 CHANNELS

[Region 3]

Group No.	Channel Nos.
23	23-63-103-143-
24	24-64-104-144-
25	25-65-105-145-
26	26-66-106-146-
27	27-67-107-147-
28	28-68-108-148-
29	29-69-109-149-
30	30-70-110-150-
31	31-71-111-151-
32	32-72-112-152-
33	33-73-113-153-
34	34-74-114-154-
35	35-75-115-155-
36	36-76-116-156-
37	37-77-117-157-
Contiguous channels	391, 392, 393, 394, 396, 397, 398, 399,

TABLE 19—BUSINESS CATEGORY—85 CHANNELS

[Region 3]

Group No.	Channel Nos.
401	401-441-481-521-
402	402-442-482-522-
403	403-443-483-523-
404	404-444-484-524-

E 19—BUSINESS CATEGORY—85 CHANNELS—Continued

[Region 3]

Group No.	Channel Nos.
	405-445-485-525-565
	406-446-486-526-566
	407-447-487-527-567
	408-448-488-528-568
	409-449-489-529-569
	410-450-490-530-570
	411-451-491-531-571
	412-452-492-532-572
	413-453-493-533-573
	414-454-494-534-574
	415-455-495-535-575
	416-456-496-536-576
annels	206, 207, 208, 209, 210

—SMRS CATEGORY—135 CHANNELS

[Region 3]

oup Nos.	Channel No.
	38-78-118-158-198
	39-79-119-159-199
	40-80-120-160-200
	417-457-497-537-577
	418-458-498-538-578
	419-459-499-539-579
	420-460-500-540-580
	421-461-501-541-581
	422-462-502-542-582
	423-463-503-543-583
	424-464-504-544-584
	425-465-505-545-585
	426-466-506-546-586
	427-467-507-547-587
	428-468-508-548-588
	429-469-509-549-589
	430-470-510-550-590
	431-471-511-551-591
	432-472-512-552-592
	433-473-513-553-593
	434-474-514-554-594
	435-475-515-555-595
	436-476-516-556-596
	437-477-517-557-597
	478-478-518-558-598
	439-479-519-559-599
	440-480-520-560-600

les 21, 22, 23, and 24 list the
es available in Regions 7 and
categories of users indicated.

—(REGIONS 7, 8) PUBLIC SAFETY
TEGORY—170 CHANNELS

p No.	Channel Nos.
	1-41-81-121-161
	2-42-82-122-162
	3-43-83-123-163
	4-44-84-124-164
	5-45-85-125-165

TABLE 21—(REGIONS 7, 8) PUBLIC SAFETY CATEGORY—170 CHANNELS—Continued

Group No.	Channel Nos.
6	6-46-86-126-166
7	7-47-87-127-167
8	8-48-88-128-168
9	9-49-89-129-169
10	10-50-90-130-170
11	11-51-91-131-171
12	12-52-92-132-172
13	13-53-93-133-173
14	14-54-94-134-174
15	15-55-95-135-175
16	16-56-96-136-176
17	17-57-97-137-177
18	18-58-98-138-178
19	19-59-99-139-179
20	20-60-100-140-180
21	21-61-101-141-181
22	22-62-102-142-182
23	23-63-103-143-183
24	24-64-104-144-184
25	25-65-105-145-185
26	26-66-106-146-186
27	27-67-107-147-187
28	28-68-108-148-188
29	29-69-109-149-189
30	30-70-110-150-190
31	31-71-111-151-191
32	32-72-112-152-192
33	33-73-113-153-193
34	34-74-114-154-194

TABLE 22—(REGIONS 7, 8) INDUSTRIAL/LAND TRANSPORTATION CATEGORY—120 CHANNELS

Group No.	Channel Nos.
201	201-241-281-321-361
202	202-242-282-322-362
203	203-243-283-323-363
204	204-244-284-324-364
205	205-245-285-325-365
206	206-246-286-326-366
207	207-247-287-327-367
208	208-248-288-328-368
209	209-249-289-329-369
210	210-250-290-330-370
211	211-251-291-331-371
212	212-252-292-332-372
213	213-253-293-333-373
214	214-254-294-334-374
215	215-255-295-335-375
216	216-256-296-336-376
217	217-257-297-337-377
218	218-258-298-338-378
219	219-259-299-339-379
220	220-260-300-340-380
221	221-261-301-341-381
222	222-262-302-342-382
223	223-263-303-343-383
224	224-264-304-344-384

Table 23—(Regions 7, 8) Business Category—120 Channels

Group No.	Channel Nos.
401	401-441-481-521-561
402	402-442-482-522-562
403	403-443-483-523-563
404	404-444-484-524-564
405	405-445-485-525-565
406	406-446-486-526-566
407	407-447-487-527-567
408	408-448-488-528-568
409	409-449-489-529-569
410	410-450-490-530-570
411	411-451-491-531-571
412	412-452-492-532-572
413	413-453-493-533-573
414	414-454-494-534-574
415	415-455-495-535-575
416	416-456-496-536-576
417	417-457-497-537-577
418	418-458-498-538-578
419	419-459-499-539-579
420	420-460-500-540-580
421	421-461-501-541-581
422	422-462-502-542-582
423	423-463-503-543-583
424	424-464-504-544-584

Table 24—(Regions 7, 8) SMRS Category—190 Channels[1]

Group No.	Channel Nos.
35	35-75-115-155-195
36	36-76-116-156-196
37	37-77-117-157-197
38	38-78-118-158-198
39	39-79-119-159-199
40	40-80-120-160-200
225	225-265-305-345-385
226	226-266-306-346-386
227	227-267-307-347-387
228	228-268-308-348-388
229	229-269-309-349-389
230	230-270-310-350-390
231	231-271-311-351-391
232	232-272-312-352-392
233	233-273-313-353-393
234	234-274-314-354-394
235	235-275-315-355-395
236	236-276-316-356-396
237	237-277-317-357-397
238	238-278-318-358-398
239	239-279-319-359-399
240	240-280-320-360-400
425	425-465-505-545-585
426	426-466-506-546-586
427	427-467-507-547-587
428	428-468-508-548-588
429	429-469-509-549-589
430	430-470-510-550-590
431	431-471-511-551-591
432	432-472-512-552-592
433	433-473-513-553-593
434	434-474-514-554-594
435	435-475-515-555-595
436	436-476-516-556-596
437	437-477-517-557-597
438	438-478-518-558-598
439	439-479-519-559-59
440	440-480-520-560-60

(Secs. 4(i) and 303, Communications Act, as amended, and 5 U.S.C. 553 (b)(3)(B) and (d)(1))

[47 FR 41032, Sept. 16, 1982; 47 FR 4104 Sept. 16, 1982; 47 FR 51883, Nov. 18, 1982, as amended at 48 FR 51928, Nov. 15, 1983; 49 FR 22094, May 25, 1984; 50 FR 12261, Mar. 28, 1985; 52 FR 3662, Feb. 5, 1987]

§ 90.621 Selection and assignment of frequencies.

(a) Applicants for frequencies in the Public Safety, Industrial/Land Transportation, Business, and General Categories must specify on the application the frequencies on which the proposed system will operate pursuant to a recommendation by the applicable frequency coordinator. Applicants for frequencies in the SMRS Category may either request specific frequencies by including in their applications justification for the frequencies requested or may request the Commission to select frequencies for the system from the SMRS Category.

(1) For trunked systems, the assignment of frequencies will be made in accordance with applicable loading criteria and in accordance with the following:

(i) Channels will be chosen and assigned in accordance with §§ 90.615, 90.617, or 90.619.

(ii) A mobile station is authorized to transmit on any frequency assigned to its associated base station.

(iii) There are no limitations on the number of frequencies that may be trunked. Except as indicated in paragraph (a)(1)(iv) of this section, authorizations may be granted for up to 20 trunked frequency pairs at a time in accordance with the frequencies listed in §§ 90.615, 90.617, and 90.619.

(iv) The maximum number of frequency pairs that will be assigned from the 806-821/821-866 MHz band to an SMR applicant at any one time is five. The maximum number of frequency pairs that will be assigned

n the 896-901/935-940 MHz band
n SMR applicant at any one time
n.

) For conventional systems the as-
ment of frequencies will be made
ccordance with applicable loading
ria. Accordingly, depending upon
number of mobile units to be
ed, an applicant may either be re-
ed to share a channel, or, if an ap-
nt shows a sufficient number of
le units to warrant the assign-
t of one or more channels for its
sive use, it may be licensed to use
channel or channels on an un-
ed basis in the area of operation
fied in its application.

Channels will be chosen and as-
d in accordance with §§ 90.615,
7, or 90.619.

A mobile station is authorized to
mit on any frequency assigned to
sociated base station.

Systems authorized on frequen-
n the SMRS Category will be af-
d protection solely on the basis
xed mileage separation criteria.
co-channel interference between
station operations will be taken
consideration. Adjacent channel
other types of possible interfer-
will not be taken into account.
ordinary separation between co-
nel systems will be 112 km. (70
ith the following exceptions:

No trunked system will be less
168 km. (105 mi.) distant from co-channel trunked systems authorized 1 kw. ERP on any of the following mountain top sites: Santiago Peak, Sierra Peak, Mount Lukens, Mount Wilson (California).

(2) The separation between certain co-channel trunked systems located at high antenna sites in the State of California north of 35° North Latitude and west of 118° West Longitude shall be determined as follows:

(i) Required co-channel separations between common antenna sites are given by Table 1. A channel group assigned to a station on a site listed in the vertical column may not be re-assigned to a station on a site listed in the horizontal column if there is an "X" in the box created by the intersection of the vertical and horizontal lines. The geographic coordinates listed in the table represent an average for each particular site; all locations within one mile of the coordinates will be considered to be at that site.

(ii) Required co-channel separations involving antenna sites not listed in Table 1 shall be determined by Commission staff on a case by case basis. The interference potential of proposed assignments will be evaluated considering parameters such as antenna height, effective radiated power, terrain irregularities, and market conditions.

TABLE 1: CO-CHANNEL SEPARATIONS BETWEEN COMMON ANTENNA SITES IN THE STATE OF CALIFORNIA NORTH OF 35° NORTH LATITUDE AND WEST OF 118° WEST LONGITUDE

North Latitude	West Longitude	Site Name	Big Rock Ridge	Mt. Tamalpais	Wolfback Ridge	Mt. Diablo	Grizzley Peak	Vollmer Peak	Roundtop	Clay Jones Ridg	San Bruno Mtn	Skeggs Peak	Black Mountain	Mt Umunhum	Mt Chual	Loma Prieta	Toro Peak	Mission Ridge	Tuscan Buttes	Forest Ranch	Sutter Buttes	Wolf Mtn	Chantry Hill	Mt Vaca	Fowler Peak	Mt Oso	Mt Bullion	Meadow Lakes	Bear Mtn	Joaquin Ridge	Blue Ridge	Pheasant Hill	Granite Peak	Elk Hill	McKittrick Peak	McKittrick Peak
38-03-40	122-36-17	Big Rock Ridge	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X			X	X	X	X	X	X										
37-55-44	122-35-11	Mt. Tamalpais	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X			X	X	X	X	X	X										
37-50-57	122-29-56	Wolfback Ridge	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X						X												
37-52-54	121-55-05	Mt. Diablo	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X	X	X	X	X	X	X	X	X							
37-51-42	122-12-30	Grizzley Peak	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X			X	X	X	X	X	X										
37-52-58	122-13-11	Vollmer Peak	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X	X	X	X	X	X	X									
37-51-00	122-11-30	Roundtop	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X	X	X	X	X	X	X									
37-43-33	122-26-52	Clay Jones Ridg.	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X			X			X												
37-41-21	122-26-08	San Bruno Mtn.	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X						X												
37-24-39	122-18-20	Skeggs Peak	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						X		X										
37-19-13	122-08-33	Black Mountain	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						X		X										
37-10-37	121-54-24	Mt. Umunhum	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						X		X										
37-07-09	121-49-58	Mt. Chual	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						X		X										
37-06-40	121-50-29	Loma Prieta	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						X		X										
36-31-45	121-36-24	Toro Peak										X	X	X	X	X	X	X												X						
37-29-15	121-52-03	Mission Ridge	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						X	X	X	X									
40-15-46	122-05-37	Tuscan Buttes																	X	X	X	X	X	X												
39-51-50	121-41-20	Forest Ranch				X		X	X										X	X	X	X	X	X												
39-12-17	121-49-02	Sutter Buttes	X	X		X	X	X	X	X									X	X	X	X	X	X	X	X										
39-08-01	121-05-58	Wolf Mtn	X	X		X	X	X	X										X	X	X	X	X	X	X	X										
38-52-15	121-07-39	Chantry Hill	X	X		X	X	X	X										X	X	X	X	X	X	X	X	X									
38-24-20	122-06-30	Mt. Vaca	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X									
38-01-15	120-35-06	Fowler Peak	X	X		X	X	X	X									X			X	X	X	X	X	X	X	X	X	X						
37-30-31	121-22-26	Mt. Oso	X	X		X	X	X	X			X	X	X	X	X		X			X	X	X	X	X	X	X	X	X	X	X					
37-32-32	120-03-45	Mt. Bullion				X		X	X									X					X	X	X	X	X	X	X	X	X					
37-04-10	119-25-39	Meadow Lakes				X																			X	X	X	X	X	X	X	X	X	X	X	X
36-44-38	119-16-59	Bear Mtn				X																			X	X	X	X	X	X	X	X	X	X	X	X
36-18-10	120-24-03	Joaquin Ridge															X								X	X	X	X	X	X	X	X	X	X	X	X
36-17-07	118-50-19	Blue Ridge																								X	X	X	X	X	X	X	X	X	X	X
35-38-29	118-47-08	Pheasant Hill																									X	X	X	X	X	X	X	X	X	X
35-33-00	118-49-20	Granite Peak																									X	X	X	X	X	X	X	X	X	X
35-17-17	118-30-22	Elk Hill																									X	X	X	X	X	X	X	X	X	X
35-17-37	[illegible]	Mc Kittrick Peak																									X	X	X	X	X	X	X	X	X	X
[illegible]	[illegible]	[illegible]																									X	X	X	X	X	X	X	X	X	X

3) SMR trunked systems located in State of Washington at the follow- locations shall be separated from channel systems by a minimum of km (105 miles). Locations within mile of the geographical coordi- es listed in the table will be considd to be at that site.

Site name	North latitude	West longitude
Constitution	48-40-48	122-50-24
n Mountain	48-35-42	122-09-35
s Mountain	48-25-31	122-08-54
le Ridge	48-43-23	121-51-37
Mountain	47-32-52	122-46-52
Mountain	47-47-06	122-59-30
er Mountain	47-32-40	122-06-30
k Mountain	47-30-15	122-03-30
Mountain	47-30-14	121-58-28
s Mountain	48-21-53	122-16-02
nald Mountain	47-20-1[illegible]	122-51-26
ard Hill	48-00-59	122-55-31
n Mountain	47-19-08	123-20-44
s Mountain	47-33-41	122-48-27
al Peak	46-58-22	123-08-17
esnake Mountain	47-28-10	121-49-13
e Sisters Mountain	47-07-20	121-53-30
s Mountain	47-12-15	121-47-38
Pole Hill	47-02-52	122-08-35

c) Trunked systems authorized on quencies in the Public Safety, Instrial/Land Transportation, Busis, and General Categories will be tected solely on the basis of preted contours. Coordinators will atnpt to provide a 40 dBu contour and limit co-channel interference levels 30 dBu over an applicant's requestservice area. This would result in a eage separation of 70 miles for typ- system parameters. Applicants uld be aware that in some areas, Seattle, Los Angeles, and north- California, separations greater n 70 miles may be appropriate. arations may be less than 70 miles ere the requested service areas, ter- or other factors warrant reduc- In the event that the separation ess than 70 miles, the coordinator st indicate that the protection cri- a have been preserved or that the ected licensees have agreed in writ- to the proposed system. Only conel interference between base sta- operations will be taken into coneration. Adjacent channel and er types of possible interference not be taken into account.

(d) Conventional systems authorized on frequencies in the Public Safety (except for those systems that have participated in a formal regional planning process as described in § 90.16), Industrial/Land Transportation, Business, and General Categories that have met the loading level necessary for channel exclusivity will be protected in the same fashion as described in paragraph (c) of this section.

(e) Conventional systems authorized on frequencies in the Public Safety (except for those systems that have participated in a formal regional planning process as described in § 90.16), Industrial/Land Transportation, Business, and General Categories which have not met the loading levels necessary for channel exclusivity will not be afforded co-channel protection.

(f) UHF television translator stations using UHF output channels from Channels 70 through 83 operate on a secondary basis to land mobile stations using the UHF bands allocated under this subpart for land mobile use. Accordingly, such television translator stations will not be protected from interference from such authorized land mobile stations.

(g) Frequencies in the 806-821/851-866 MHz bands listed as available for eligibles in the Public Safety, Industrial/Land Transportation, Business, General, and SMRS Categories are available for inter-category sharing under the following conditions:

(1) Channels in the Public Safety, Industrial/Land Transportation and Business categories will be available to eligible applicants in those categories only if there are no frequencies in their own category and no public safety systems are authorized on those channels under consideration to be shared.

(2) Channels in the Industrial/Land Transportation and Business categories will be available to fully-loaded SMR systems if no SMRS category frequencies are available. Evidence must be provided that the SMR applicant has sufficient users to warrant the authorization of additional channels. If available, the SMR licensee will be authorized no more than one channel more than its current loading warrants.

(3) Channels in the General Category are available to fully-loaded trunked Public Safety, Industrial/Land Transportation, Business, and SMR Category systems for expansion provided that:

(i) For non-SMR applicants, the application must include a statement from the applicant's own frequency coordinator verifying that there are no available frequencies in the applicant's service category in the frequency bands 806-824/851-869 MHz. For SMR applicants, the application must include a statement that no SMRS Category frequencies are available in the 806-824/851-869 MHz frequency bands supported by evidence of the existence of a current waiting list for SMRs in that geographic area.

(ii) As a result of the addition of any unused channels in the General Category to an existing trunked system, the number of channels that may be assigned to the station(s) authorized to operate that system may not exceed one channel more than its current loading warrants. If, as a result of the addition of General Category channels, an applicant obtains the maximum number of channels possible (one channel more than current loading warrants), and if the applicant is on the SMR waiting list for the geographic area in which it receives the channels, the applicant shall forfeit its position on that waiting list.

(iii) All frequencies being trunked together must be located at a primary site.

(iv) The application must be coordinated by one of the three recognized category coordinators above 800 MHz.

(4) Channels in the SMRS category will be available to fully-loaded Industrial/Land Transportation and Business category systems if frequencies in their own categories are not available. Evidence must be provided that the applicant has sufficient users to warrant the authorization of additional channels. If available, the licensee will be authorized no more than one channel more than its current loading warrants.

(5) The applicant must submit a statement from its own category coordinator that frequencies are not available in that category, and coordination is required from the applicable out-of-category coordinator.

(6) The out-of-category licensee must operate by the rules applicable to the category to which the frequency is allocated.

(h) The 896-901/935-940 MHz channels listed as available for eligibles in the Industrial/Land Transportation and Business categories will be available for inter-category sharing to all persons eligible in those categories under the following conditions thirty-six (36) months from the date the first authorization in this spectrum is issued.

(1) The applicant must submit a statement from its own category coordinator that frequencies are not available in that category, and coordination is required from the applicable out-of-category coordinator.

(2) The out-of-category licensee must operate by the rules applicable to the category to which the frequency is allocated.

(i) Applications for Public Safety systems (both trunked and conventional) in the 821-824/866-869 MHz bands will be assigned and protected based on the criteria established in the appropriate regional plan. See § 90.16 and the *Report and Order* in General Docket 87-112.

(j) Channel numbers 401-410, 441-450, 481-490, 521-530, and 561-570 are available on co-primary basis to station in Basic Exchange Telecommunications Radio Service as described in Part 22 of the Commission's Rules

[47 FR 41032, Sept. 16, 1982]

EDITORIAL NOTE: For Federal Register citations affecting § 90.621, see the List of CFR Sections Affected in the Finding Aids section of this volume.

§ 90.623 Limitation on the number of frequencies assignable for conventional systems.

(a) The maximum number of frequency pairs that may be assigned to a licensee for operation in the conventional mode in a given area is five (5).

(b) Where an applicant proposes to operate a conventional radio system to provide facilities for the use of a single person or entity eligible under subparts B, C, D, or E of this part, the applicant may be assigned only the number of frequency pairs justified on the basis of the requirements of the proposed single user of the system.

(c) No licensee will be authorized an additional frequency pair for a conventional system within 40 miles of an existing conventional system, except where:

(1) The additional frequency pair will be used to provide radio facilities to a single entity and the additional frequency pair is justified on the basis of the requirements of the proposed single user; or,

(2) The licensee's existing frequency pair(s) is loaded to prescribed levels.

(d) No licensee will be authorized frequencies for a conventional system if that licensee is operating an unloaded trunked system or has an application pending for a trunked system to serve multiple subscribers within 40 miles of the requested conventional system.

[47 FR 41032, Sept. 16, 1982, as amended at 48 FR 44559, Sept. 29, 1983; 48 FR 51929, Nov. 15, 1983]

§ 90.625 Other criteria to be applied in assigning channels for use in conventional systems of communication.

(a) Where an applicant shows that a channel will be loaded to 70 mobile stations, that channel will be made available to that applicant for its exclusive use in the area in which it proposes to operate. If the showing made justifies the assignment of more than one channel to the applicant, additional frequencies will be authorized.

(b) Where an applicant proposes to furnish service to eligibles under subparts B, C, D, or E of this part on a commercial basis using a conventional system of communication, the application will be considered on the same basis as that of an applicant for private or shared communications facilities.

(c) No person authorized to operate any radio facility under the provisions of this subpart shall have a right to protest proposals on grounds other than violation of or inconsistency with the provisions of this subpart. All grants are made subject to this condition and to the other conditions and standards set out in this subpart.

[47 FR 41032, Sept. 16, 1982]

§ 90.627 Limitation on the number of frequency pairs that may be assignable for trunked systems and on the number of trunked systems.

(a) The maximum number of frequency pairs that may be assigned at any one time for the operation of a trunked radio system is twenty, except as specified in § 90.621(a)(1)(iv).

(b) No licensee will be authorized an additional trunked system within 40 miles of an existing trunked system, except where:

(1) The additional trunked system will be used to provide radio facilities for a single entity, where the additional system is justified on the basis of the requirements of the proposed single user; or,

(2) The licensee's existing trunked system is loaded to at least 70 mobile and control stations per channel; or,

(3) A licensee of an SMR system in the 806-821/851-866 MHz bands seeks authorization to operate an SMR system in the 896-901/935-940 MHz bands.

[47 FR 41032, Sept. 16, 1982, as amended at 48 FR 44559, Sept. 29, 1983; 48 FR 51929, Nov. 15, 1983; 49 FR 36377, Sept. 17, 1984; 51 FR 37404, Oct. 22, 1986; 53 FR 12157, Apr. 13, 1988]

§ 90.629 Extended implementation schedules.

Applicants requesting frequencies in the Public Safety, Industrial/Land Transportation, Business, and General Categories for either trunked or conventional operations may be authorized a period of up to three (3) years for placing a station in operation in accordance with the following:

(a) The applicant submits justification for an extended implementation period. The justification must include the implementation schedule (with milestones) for the construction and for the loading of the facility (e.g., construction of base stations and for placing mobiles in service) and must show either that:

(1) The proposed system will serve a large fleet (at least two hundred (200) mobile units) and will involve a multi-

year cycle for its planning, approval, funding, purchase and construction; or

(2) The proposed system will require longer than eight months to place in operation because of its purpose, size, or complexity; or

(3) The proposed system is to be a part of a coordinated or integrated area-wide system which will require more than a year to plan, approve, fund, and construct; or

(4) The applicant is a local governmental agency and demonstrates that the government involved is required by law to follow a multi-year cycle for planning, approval, funding and for purchasing the proposed system.

(b) Authorizations under this Section are conditioned upon the licensee's compliance with the implementation schedule. If the licensee fails to meet the schedule, and all channels are assigned in the system's geographic area, authorization for trunked channels not loaded to 100 mobile stations cancels automatically. Conventional channels not loaded to 70 mobile units may be subject to shared use by the addition of other licensees. The licensee must submit a report to the Commission's Private Radio Bureau, Gettysburg, PA 17326 annually, showing the extent to which the authorized system has been implemented. A copy of the report must be submitted to the licensee's frequency advisory committee.

(c) Applicants eligible in the Industrial/Land Transportation Category requesting authorizations under this section may request frequencies in the Business Category only if the application contains a statement that no frequencies in the Industrial/Land Transportation Category are available for assignment in their geographic area.

[47 FR 41032, Sept. 16, 1982, as amended at 47 FR 51883, Nov. 18, 1982; 48 FR 51929, Nov. 15, 1983; 54 FR 38682, Sept. 20, 1989; 55 FR 28031, July 9, 1990]

§ 90.631 Trunked systems loading, construction and authorization requirements.

(a) Trunked systems will be authorized on the basis of a loading criterion of 100 mobile stations per channel. For purposes of determining compliance with trunked system loading requirements under this subpart, the term "mobile station" includes vehicular and portable mobile units and control stations.

(b) Each applicant for a trunked system shall certify that a minimum of 70 mobiles for each channel authorized will be placed in operation within five years of the initial license grant. If at the end of five years a trunked system is not loaded to the prescribed levels and all channels in the licensee's category are assigned in the system's geographic area, authorization for channels not loaded to 100 mobile stations per channel cancels automatically. If a trunked system has channels from more than one category, General Category channels are the first channels considered to cancel automatically. All licensees who are authorized initially before June 1, 1993, and are within their original license term are subject to this condition. A licensee that has had authorized channels cancelled due to failure to meet the above loading requirements will not be authorized to obtain additional channels to expand that same system for a period of six months from the date of cancellation.

(c) Except as provided in paragraph (d) of this section, an applicant seeking to expand a trunked system by requesting additional channels from the Commission, or through intercategory sharing, or through an assignment must have a loading level of 70 mobiles per channel on the existing system that is the subject of the expansion request.

(d) In rural areas, a licensee of a trunked system may request to increase its system capacity by five more channels than it has constructed without meeting the loading requirements specified in paragraphs (b) and (c) of this section. A rural area is defined for purposes of this section as being beyond a 100-mile radius of the designated centers of the following urbanized areas, as well as those areas that have a waiting list. (Rural areas may be different for 800 and 900 MHz channels since the Commission maintains separate waiting lists for these frequency bands.) The identified urbanized areas are: New York, NY; Los

es, CA; Chicago, IL; Philadel-
PA: San Francisco, CA; Detroit,
oston, MA; Houston, TX; Wash-
, DC; Dallas-Fort Worth, TX;
i, FL; Cleveland, OH; St. Louis,
Atlanta, GA; Pittsburgh, PA; Bal-
e, MD; Minneapolis-St. Paul,
Seattle, WA; San Diego, CA; and
a-St. Petersburg, FL. The coordi-
for the centers of these areas are
referenced in § 90.635, except
he coordinates for Tampa-St. Pe-
rg are latitude 28°00′00″ N, lon-
82°27′00″ W. Where waiting lists
nine whether an area is rural,
esignated centers of those areas
e identified on the actual waiting
eleased by the Commission. If a
g list is later established in a
area, licensees who have ac-
l additional channels pursuant to
aragraph will be subject to the
natic cancellation provisions in
raph (b) of this section at the
f one year from the date the area
ppears on a Commission waiting
r at the end of their license term,
ever is longer.

Except as provided in § 90.629, li-
es of trunked facilities must com-
construction within one year.

If a station is not placed in per-
nt operation within one year,
t as provided in § 90.629, its li-
cancels automatically and must
urned to the Commission.

Wide area systems may be au-
zed to persons eligible for licens-
nder subparts B, C, D, or E of
art upon an appropriate showing
ed. Remote or satellite stations of
area systems in the Police, Fire,
Government, Highway Mainte-
, Forestry-Conservation, Special
gency, Telephone Maintenance
Power Radio Services may be au-
zed on a primary basis if such sta-
are the first to be authorized in
area of operation on the frequen-
group of frequencies. Remote or
ite stations of wide area systems
other services will be authorized
on a secondary, non-interference
to cochannel licensees. To deter-
system loading, the total number
obile units and control stations
ting in the wide-area system
be counted with respect to the
total number of base station frequencies assigned to the system.

(h) Regional, statewide, or ribbon configuration systems may be authorized to persons eligible for licensing under subparts B, C, D or E of this part upon an appropriate showing of need. In a ribbon, regional or statewide system, a mobile station will be counted for channel loading purposes only for the base station facility in the geographic area in which it primarily operates. If this cannot be determined, it will be counted fractionally over the number of base station facilities with which it communicates regularly.

[47 FR 41032, Sept. 16, 1982, as amended at 48 FR 51929, Nov. 15, 1983; 49 FR 36377, Sept. 17, 1984; 53 FR 12157, Apr. 13, 1988; 55 FR 28031, July 9, 1990]

§ 90.633 Conventional systems loading requirements.

(a) Conventional systems of communication will be authorized on the basis of a minimum loading criteria of 70 mobile stations for each channel authorized.

(b) A channel will not be assigned to additional licensees when it is loaded to 70 mobile stations. Where a licensee does not load a channel to 70 mobiles the channel will be available for assignment to other licensees. All authorizations for conventional systems are issued subject to this potential channel sharing condition.

(c) Except as provided in § 90.629 licensees of conventional systems must place their authorized facilities in operation not later than eight months after the date of grant of the license for the system.

(d) If a station is not placed in operation in eight months, except as provided in § 90.629, its license cancels automatically.

(e) A licensee may apply for additional frequency pairs if its authorized conventional channel(s) is occupied to 70 mobiles. Applications may be considered for additional channels in areas where spectrum is still available and not applied for, even if the already authorized channel(s) is not loaded to 70 mobile units, upon an appropriate demonstration of need.

(f) Wide-area systems may be authorized to persons eligible for licensing under subparts B, C, D or E of this part upon an appropriate showing of need. For loading purposes, if the total number of mobile stations justifies the total number of authorized based frequencies in a given area, the system will be construed to be loaded.

(g) Regional, statewide or ribbon configuration systems may be authorized to persons eligible for licensing under subparts B, C, D or E of this part upon an appropriate showing of need. In a ribbon, regional or statewide system, a mobile station will be counted for channel loading purposes only for the base station facility in the geographic area in which it primarily operates. If this cannot be determined, it will be counted fractionally over the number of base station facilities with which it communicates regularly.

[47 FR 41032, Sept. 16, 1982, as amended at 48 FR 51929, Nov. 15, 1983]

TECHNICAL REGULATIONS REGARDING THE USE OF FREQUENCIES IN THE 806-824 MHZ, 851-869 MHZ, 896-901 MHZ, AND 935-940 MHZ BANDS

§ 90.635 Limitations on power and antenna height.

(a) Systems to be located within 24 km. (15 mi.) of the geographic center of the 50 urbanized areas detailed in Table 1 will be considered "urban" systems. All others will be considered "suburban" systems.

(b) The effective radiated power and antenna height, for base stations used in suburban-conventional systems of communications shall be no greater than 500 watts (27 dBu) and 152 m (500 ft) above average terrain (AAT) respectively, or the equivalent as determined from Table 2. These are maximum values, and applicants are required to justify power levels and antenna heights requested. For service area requirements less than 32 km. (20 mi.) in radius, see Table 3.

(c) The effective radiated power and antenna height for base stations used in trunked and urban-conventional systems may not exceed 1 kilowatt (30 dBw) and 304 m. (1,000 ft.) above average terrain (AAT), respectively, or the equivalent thereof as determined from Table 2. These are maximum values and applicants will be required to justify power levels and antenna heights requested. For service area requirements less than 32 km (20 mi.) in radius, see Table 4.

(d) The maximum output power of the transmitter for mobile stations is 100 watts (20 dBw).

TABLE 1—URBANIZED AREAS

Urbanized area	Geographic center	
	North latitude	West longitude
Akron, OH	41°05'00"	81°30'44"
Albany-Schenectady-Troy, NY	42°39'01"	73°45'01"
Atlanta, GA	33°45'10"	84°23'37"
Baltimore, MD	39°17'26"	76°36'45"
Birmingham, AL	33°31'01"	86°48'36"
Boston, MA	42°21'24"	71°03'24"
Buffalo, NY	42°53'12"	78°52'30"
Chicago, IL	41°52'28"	87°38'22"
Cincinnati, OH	39°06'07"	84°30'35"
Cleveland, OH	41°29'51"	81°41'50"
Columbus, OH	39°57'47"	83°00'17"
Dallas, TX	32°47'09"	96°47'37"
Dayton, OH	39°45'32"	84°11'43"
Denver, CO	39°44'58"	104°59'22"
Detroit, MI	42°19'48"	83°02'57"
Fort Lauderdale-Hollywood, FL	26°07'30"	80°09'00"
Fort Worth, TX	32°44'55"	97°19'44"
Houston, TX	29°45'26"	95°21'37"
Indianapolis, IN	39°46'07"	86°09'46"
Jacksonville, FL	30°19'44"	81°39'42"
Kansas City, MO-KS	39°04'56"	94°35'20"
Los Angeles, CA	34°03'15"	118°14'28"
Louisville, KY-IN	38°14'47"	85°45'49"
Miami, FL	25°46'37"	80°11'32"
Memphis, TN-MS	35°08'46"	90°03'13"
Milwaukee, WI	43°02'19"	87°54'15"
Minneapolis-St. Paul, MN	44°58'57"	93°15'43"
New Orleans, LA	29°56'53"	90°04'10"
New York-northeastern New Jersey	40°45'06"	73°59'39"
Norfolk-Portsmouth, VA	36°51'10"	76°17'21"
Oklahoma City, OK	35°28'26"	97°31'04"
Omaha, NE-IO	41°15'42"	95°56'14"
Philadelphia, PA-NJ	39°56'58"	75°09'21"
Phoenix, AZ	33°27'12"	112°04'28"
Pittsburgh, PA	40°26'19"	80°00'00"
Portland, OR-WA	45°31'06"	122°40'35"
Providence-Pawtucket-Warwick, RI-MA	41°49'32"	71°24'41"
Rochester, NY	43°09'41"	77°36'21"
Sacramento, CA	38°34'57"	121°29'41"
St. Louis, MO-IL	38°37'45"	90°12'22"
St. Petersburg, FL	27°46'18"	82°38'19"
San Antonio, TX	29°25'37"	98°29'06"
San Bernardino-Riverside, CA	34°06'30"	117°17'28"
San Diego, CA	32°42'53"	117°09'21"
San Francisco-Oakland, CA	37°46'39"	122°24'40"
San Jose, CA	37°20'16"	121°53'24"
Seattle, WA	47°36'32"	122°20'12"
Springfield-Chicopee-Holyoke, MA-CT	42°06'21"	72°35'32"
Toledo, OH-MI	41°39'14"	83°32'39"
Washington, DC-MD-VA	38°53'51"	77°00'33"

e 2—Equivalent Power and Antenna ights for Base Stations in the 851–869 Hz, and 935–940 MHz Bands Which Have Requirement for a 32 km (20 mi.) Service ea Radius

ntenna height (AAT) (feet)	Effective radiated power (watts) [1] [2]	
	Urban/ trunked	Suburban
5,000	65	15
o 5,000	65	15
o 4,500	70	29
o 4,000	75	25
o 3,500	100	30
o 3,000	140	35
o 2,500	200	50
o 2,000	350	80
o 1,500	600	160
1,000	[3] 1,000	220
00	1,000	[4] 500

[1] Power is given in terms of effective radiated power (ERP).

[2] Applicants in the Los Angeles, CA, area who demonstrate a need to serve both the downtown and fringe areas will be permitted to utilize an ERP of 1 kw at the following mountaintop sites: Santiago Park, Sierra Peak, Mount Lukens, and Mount Wilson.

[3] Stations with antennas below 1,000 ft (AAT) will be restricted to a maximum power of 1 kw (ERP).

[4] Stations with antenna below 500 ft (AAT) will be restricted to a maximum power of 500 W (ERP).

[5] Licensees in San Diego, CA, will be permitted to utilize an ERP of 500 watts at the following mountaintop sites: Palomar, Otay, Woodson, and Miguel.

3—Equivalent Powers and Antenna Heights for Suburban-Conventional Base Stations in 851–869 MHz, and 935–940 MHz Bands Which Have a Requirement for Less Than 20-mi. vice Area Radius—Maximum Effective Radiated Power (Watts)

	Base station antenna height (AAT) (feet)					
	401–500	301–400	201–300	101–200	51–100	0–50
area radius, miles (kilometers):						
(32)	500	500	500	500	500	500
(30)	400	500	500	500	500	500
(29)	310	385	500	500	500	500
(27)	235	300	385	500	500	500
(26)	175	220	285	440	500	500
(24)	130	160	215	330	500	500
(22)	95	120	155	240	480	500
(21)	70	85	115	175	350	500
(19)	50	60	80	125	250	500
(18)	35	45	60	90	180	360
(16)	25	30	40	60	120	240
4)	15	20	25	40	80	160
3)	10	12	15	25	50	100
1)	6	7	10	15	30	60
0)	3	4	5	7	15	30
) or less	1	2	3	4	8	16

4—Equivalent Powers and Antenna Heights for Urban-Conventional and Trunked System e Stations in the 851–869 MHz and 935–940 MHz Bands Which Have a Requirement for s Than 20-mi. Service Area Radius—Maximum Effective Radiated Power (Watts)

	Base station antenna height (AAT)							
	751–1,000	501–750	401–500	301–400	201–300	101–200	51–100	0–50
area radius (miles):								
	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
	800	1,000	1,000	1,000	1,000	1,000	1,000	1,002
	640	830	1,000	1,000	1,000	1,000	1,000	1,000
	480	625	960	1,000	1,000	1,000	1,000	1,000
	360	470	720	900	1,000	1,000	1,000	1,000
	270	350	540	675	875	1,000	1,000	1,000
	200	260	400	500	650	1,000	1,000	1,000

Table 4—Equivalent Powers and Antenna Heights for Urban-Conventional and Trunked System Base Stations in the 851–869 MHz and 935–940 MHz Bands Which Have a Requirement for Less Than 20-mi. Service Area Radius—Maximum Effective Radiated Power (Watts)—Continued

	Base station antenna height (AAT)							
	751-1,000	501-750	401-500	301-400	201-300	101-200	51-100	0-50
13	140	180	280	350	450	700	1,000	1,00
12	100	130	200	250	325	500	1,000	1,00
11	70	90	140	175	230	350	700	1,00
10	45	60	90	110	145	220	440	1,00
9	30	40	60	75	100	150	300	60
8	20	25	40	50	65	100	200	40
7	15	20	30	40	50	80	160	30
6	8	10	16	20	25	40	80	10
5 or less	5	6	9	12	15	25	50	10

[47 FR 41032, Sept. 16, 1982; 47 FR 41045, Sept. 16, 1982, as amended at 50 FR 784, Jan. 7, 1985; 51 FR 37404, Oct. 22, 1986; 52 FR 29857, Aug. 12, 1987; 53 FR 1027, Jan. 15, 1988]

§ 90.637 Restrictions on operational fixed stations.

(a) Except for control stations, operational fixed operations will not be authorized in the 806-824 MHz, 851-869 MHz, 896-901 MHz, or 935-940 MHz bands. This does not preclude secondary fixed tone signaling and alarm operations authorized in § 90.235 or in paragraph (c) of this section.

(b) Control stations associated with one or more mobile relay stations will be authorized only on the assigned frequency of the associated mobile station. Use of a mobile service frequency by a control station of a mobile relay system is subject to the condition that harmful interference shall not be caused to stations of licensees authorized to use the frequency for mobile service communications.

(c) Trunked SMR licensees and licensed end users may use the system for fixed ancillary signaling and data transmissions. All such fixed use is subject to the following requirements.

(1) All operations shall be on a secondary, non-interference basis to the primary mobile operation of any other licensee.

(2) The output power shall not exceed 30 watts (at the remote site).

(3) Any fixed transmitters will not count toward meeting the mobile loading requirements nor be considered in whole or in part as a justification for authorizing additional frequencies in the licensee's mobile system.

(4) Automatic means shall be provided to deactivate the remote transmitter in the event the carrier remains on for a period in excess of three minutes.

(5) Operational fixed stations authorized pursuant to the provisions of this paragraph are exempt from the requirements of §§ 90.425 and 90.429.

[47 FR 41032, Sept. 16, 1982, as amended at 48 FR 51929, Nov. 15, 1983; 49 FR 36377, Sept. 17, 1984; 51 FR 37405, Oct. 22, 1986; 52 FR 1332, Jan. 13, 1987; 53 FR 12157, Apr. 13, 1988]

§ 90.645 Permissible operations.

Conventional and trunked radio systems may be used:

(a) Only for purposes expressly allowed under this part.

(b) Only by persons who are eligible for facilities, either under this subpart or in the radio services included under subparts B, C, D, or E.

(c) Only for the transmission of messages or signals permitted in the services in which the participants are eligible.

(d) For digital or analog transmissions.

(e) An SMRS licensee or a licensee who has been authorized a channel(s) on an exclusive basis, may use the system for the transmission of any base/mobile message, page or signal

itted in the service in which the
cipants are eligible.

Where the channel(s) is assigned
SMRS licensee or exclusively to
gle licensee, or where all users of
tem agree, more than a single
ion may be utilized within the
rized bandwidth. In such cases,
requency stability requirements
0.213 shall not apply, but out-of-
emission limits of § 90.209 shall
t.

Up to five (5) contiguous 806-
51-866 band channels as listed in
615, 90.617, and 90.619 may be
rized after justification for sys-
requiring more than the normal
channel bandwidth. If neces-
licensees may trade channels
gst themselves in order to obtain
guous frequencies. Notification of
proposed exchanges shall be
to the appropriate frequency
inator(s) and to the Commission
pproval.

Up to 10 contiguous 896-901/
40 MHz band channels as listed
0.617 may be combined for sys-
requiring more than the normal
channel bandwidth. If neces-
licensees may trade channels
gst themselves in order to obtain
guous frequencies. Notification of
proposed exchanges shall be
to the appropriate frequency
linator(s) and to the Commission
pproval.

Paging operations may be utilized
ultiple licensed facilities (commu-
repeaters) only when all licensees
e facility agree to such use.

R 41032, Sept. 16, 1982, as amended at
51929, Nov. 15, 1983; 51 FR 37405,
2, 1986]

47 Station identification.

Conventional systems of commu-
ion shall be identified in accord-
with existing regulations govern-
uch matters.

Trunked systems of communica-
shall be identified through the
of an automatic device which
smits the call sign of the base sta-
facility at 30 minute intervals.
station identification shall be
on the lowest frequency in the
station trunk group assigned to
icensee. Should this frequency be in use at the time station identification is required, such identification may be made at the termination of the communication in progress on this frequency. Identification may be by voice or International Morse Code. When the call sign is transmitted in International Morse Code, it must be at a rate of between 15 to 20 words per minute and by means of tone modulation of the transmitter, the tone frequency being between 800 and 1000 hertz.

[47 FR 41032, Sept. 16, 1982]

§ 90.651 Supplemental reports required of licensees authorized under this subpart.

(a) Licensees offering service on a commercial basis to any person or entity eligible under either subparts B, C, D, or E of this part must report the number of mobile units being served annually on the anniversary of their authorization date and at the time of filing applications for renewal of license. They must also report all mobile stations which operate on more than one SMR system. These reports must be filed with the Commission's Private Radio Bureau, Licensing Division, Land Mobile Branch in Gettysburg, PA 17326. Licensees must maintain records of the names and addresses of each customer and the dates that service commenced and terminated. These records must be made available to the Commission upon request.

(b) Other trunked system licensees must report the number of mobile units being served annually, and at the time of filing applications for renewal of licenses. These reports should be filed with the Commission's Private Radio Bureau, Licensing Division, Land Mobile Branch in Gettysburg, PA 17326.

(c) Licensees of conventional systems must report the number of mobile units placed in operation within 8 months of the date of the grant of their license. Such reports shall be filed within 30 days from that date.

(d) Licensees of trunked systems must report, to the Commission's Private Radio Bureau, Licensing Division, Land Mobile Branch in Gettysburg, PA 17326, within thirteen months of the date of the grant, whether or not construction of the facility has been completed.

[47 FR 41032, Sept. 16, 1982, as amended at 47 FR 51883, Nov. 18, 1982; 54 FR 38682, Sept. 20, 1989]

§ 90.653 Number of systems authorized in a geographical area.

There shall be no limit on the number of systems authorized to operate in any one given area except that imposed by allocation limitations and no person shall have a right to protest any other proposal on grounds other than violation of any inconsistency with the provisions of this subpart.

[47 FR 41032, Sept. 16, 1982]

§ 90.655 Special licensing requirements for Specialized Mobile Radio systems.

All end users of conventional or trunked Special Mobile Radio systems must be licensed for any associated control points, control stations and mobile radio stations and only licensed end users are authorized to use those systems.

[53 FR 12158, Apr. 13, 1988]

§ 90.657 Temporary permit.

An applicant for a subpart S radio station license utilizing an already authorized facility may operate the radio station(s) for a period of up to 180 days under a temporary permit evidenced by a properly executed certification of FCC Form 572 after filing a formal application for station license together with evidence of frequency coordination (when required), provided that the antenna(s) employed by the control station(s) is (are) twenty feet or less above ground or twenty feet or less above a man-made structure other than an antenna tower to which it is affixed.

[51 FR 14999, Apr. 22, 1986]

PART 94—PRIVATE OPERATIONAL-FIXED MICROWAVE SERVICE

Subpart A—General Information

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erference to geostationary-satel-
imum path lengths for fixed
horization of microwave equip-
nsmitter control requirements.
nsmitter measurements.
cial provision for low power sys-
the 17,700-19,700 MHz band.
cial provisions for low power, lim-
overage systems in the 12,200-
MHz band.
cial provision for low-power limit-
erage systems in the band seg-
21.8-22.0 GHz and 23.0-23.2 GHz.
hnical standards for stations au-
d prior to July 1, 1976.
visions for Private Operational
use of the 12,200-12,700 MHz
rowave digital modulation.
cial provisions for operational-
stations in the 2500-2690 MHz

—Station Operating Requirements

spension of transmission re-
erator requirements.
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itter identification cards, plates,
s.
spection of stations and station
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spection and maintenance of
marking and associated control
ent.
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t E—Developmental Operation

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terference.
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port of operation.

TY: Secs. 4, 303, 48 Stat., as
1066, 1082; 47 U.S.C. 154, 303,
erwise noted.

40 FR 20928, May 13, 1975, unless
noted.

t A—General Information

sis and purpose.

basis for the rules following rt is the Communications Act of 1934, as amended, and applicable treaties and agreements to which the United States is a party. The rules in this part are issued pursuant to the authority contained in Title III of the Communications Act of 1934, as amended, which vests authority in the Federal Communications Commission to regulate radio transmissions and to issue licenses for radio stations.

(b) The purpose of the rules in this part is to prescribe the manner in which operational-fixed radio facilities may be licensed and operated in the microwave spectrum of 928-929 MHz and above 952 MHz.

[40 FR 20928, May 13, 1975, as amended at 46 FR 9953, Jan. 30, 1981]

§ 94.3 Definitions.

For the purpose of this part, the following definitions shall be applicable. For other definitions, refer to part 2 of this chapter, Frequency Allocations and Radio Treaty Matters; General Rules and Regulations.

Antenna Power Input. The radio frequency peak or RMS power, as the case may be, supplied to the antenna from the antenna transmission line and its associated impedance matching network.

Bit rate. The rate of transmission of information in binary (two state) form in bits per unit time.

Carrier. In a frequency stabilized system, the sinusoidal component of a modulated wave whose frequency is independent of the modulating wave; or the output of a transmitter when the modulating wave is made zero; or a wave generated at a point in the transmitting system and subsequently modulated by the signal; or a wave generated locally at the receiving terminal which, when combined with the side bands in a suitable detector, produces the modulating wave.

Control Station. An operational-fixed station, the transmissions of which are used to control automatically the emissions or operations of a radio station in the mobile services at a specified location.

Digital modulation. The process by which some characteristic (frequency, phase, amplitude or combinations thereof) of a carrier frequency is varied in accordance with a digital signal, e.g., one consisting of coded pulses or states.

Digital Termination Nodal Station. A fixed point-to-multipoint radio station in a Digital Termination System providing two-way communications with Digital Termination User Stations.

Digital Termination System. A fixed point-to-multipoint radio system consisting of Digital Termination Nodal Stations and their associated Digital Termination User Stations.

Digital Termination User Station. Any one of the fixed microwave radio stations located at users' premises, lying within the coverage area of a Digital Termination Nodal Station, and providing two-way digital communications with Digital Termination Nodal Station.

Equivalent Isotropically Radiated Power (EIRP). The product of the power supplied to the antenna and the antenna gain in a given direction relative to an isotropic antenna. For purpose of this part, EIRP is expressed in decibels referenced to 1 milliwatt (dBm) in the direction of the main beam.

Fixed Relay Station. An operational-fixed station associated with one or more stations in the mobile service, established to receive radio signals directed to it and to retransmit them automatically on a fixed service frequency.

Fixed Service. A service of radio communication between specified fixed points.

Fixed Station. A station in the fixed service.

Frequency Tolerance. The maximum permissible departure with respect to the assigned frequency of the corresponding characteristic frequency of an emission. For purposes of this part, the frequency tolerance is expressed as a percentage of the assigned frequency.

Internodal Link. A point-to-point communications link used to provide communications between Nodal Stations or to interconnect Nodal Stations to other communications media.

Long Haul System. A microwave system licensed under this part in which the longest radio circuit of tandem radio paths exceeds 250 miles.

Master station. A station in a multiple address radio system that controls, activates, or interrogates four or more remote stations. Master stations performing such functions may also receive transmissions from remote stations.

Microwave. For the purposes of this part, frequencies from 928-929 MHz and those above 952 MHz.

Multiple address system (MAS). A multiple address radio system is a point-to-multipoint communications system, either one-way or two-way, utilizing frequencies listed in § 94.65(a)(1) and serving a minimum of four remote stations. If a master station is part of the multiple address system, the remote stations must be scattered over the service area in such a way that two or more point-to-point systems would be needed to serve those remotes.

Necessary Bandwidth. For a given class of emission, the minimum value of the occupied bandwidth sufficient to insure the transmission of information at a rate and with the quality required for the system employed, under specified conditions. Emissions useful for the good functioning of the receiving equipment as, for example, the emission corresponding to the carrier of reduced carrier systems, shall be included in the necessary bandwidth. The necessary bandwidth may be determined by methods outlined in § 2.202 of this chapter.

Nodal Station. The central or controlling station in a radio system operating on point-to-multipoint frequencies in the 2.5, 10.6, and 18 GHz bands.

Occupied Bandwidth. The frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission. In some cases, for example, multichannel frequency-division systems, the percentage 0.5 percent may lead to certain difficulties in the practical application of the definitions of occupied and necessary bandwidth; in such cases a different percentage may prove useful.

rational-fixed Station. A fixed
n not open to public correspond-
operated by and for the sole use
ose persons or agencies operating
own radiocommunication facili-
This term includes all stations li-
d in the fixed service under this

sive Repeater. A passive antenna
nt or elements, located to reflect
tion from or redirect radiation to
ectional transmitting and/or re-
g antenna in a horizontal or near
ontal plane to a horizontal or
horizontal plane.

iscope Antenna System. An an-
system which involves the use
passive reflector to deflect radi-
from or to a directional trans-
ng and/or receiving antenna
h is oriented vertically or near
ally.

son. An individual, partnership,
iation, joint stock company, trust,
rporation.

vate Carrier. An entity licensed
e private services and authorized
ovide communications service to
private service eligibles on a
nercial basis.

ted Power Output. The maximum
frequency power output capabil-
eak or average power) of a trans-
r, under optimum conditions of
stment and operation, specified by
anufacturer.

note station. A fixed station in a
iple address radio system that
mits one-way to one or more re-
central sites, controls a master
on, or is controlled, activated, or
rogated by, and may respond to, a
er station.

ort Haul System. A microwave
m licensed under this part in
h the longest radio circuit of
em radio paths does not exceed
niles.

leo Entertainment Material. The
smission of a video signal (e.g.
ed States Standard Monochrome
ational Television Systems Com-
ee 525-line television) and an asso-
d audio signal which is designed
arily to amuse or entertain, such
ovies and games.

. 4(i), 301 and 303(r), Federal Commu-
ions Act of 1934, as amended. 47 U.S.C.
301 and 303(r))

[40 FR 20928, May 13, 1975]

EDITORIAL NOTE: For Federal Register citations affecting § 94.3, see the List of CFR Sections Affected in the Finding Aids section of this volume.

§ 94.5 Eligibility.

Any person, or any governmental entity or agency eligible for licensing in a radio service under parts 80, 87, or 90 for private operational-fixed communications related to activities for which licensing is available in such service or any person proposing to provide communications service to such persons, governmental entities or agencies is eligible to hold a license under this part.

[50 FR 13352, Apr. 5, 1985, as amended at 51 FR 31305, Sept. 2, 1986]

§ 94.7 General citizenship restrictions.

A station license may not be granted to or held by a foreign government or a representative of a foreign government.

§ 94.9 Permissibility of communications.

(a) Except as provided in paragraph (b) of this section, stations in this radio service are authorized to transmit:

(1) The licensee's own communications, including the transmission of the licensee's products and information services to the licensee's customers, except that the distribution of video entertainment material to customers on the frequencies below 21,200 MHz shall be permitted only as indicated in § 94.61(b).

(2) The communications of the licensee's parent corporation, or of another subsidiary of the same parent, or its own subsidiary where the party to be served is regularly engaged in any of the activities which constitute the basis for eligibility to use the frequencies assigned.

(3) The communications of other parties in accordance with § 94.17.

(4) Emergency communications unrelated to the licensee's activities in accordance with § 94.11.

(5) Communications on a commercial basis between the licensee and a customer, among different premises of a single eligible user, or from one eligi-

ble user to another as part of transmissions by Digital Termination Systems and associated internodal links on the frequencies provided for this purpose.

(b) The radio facilities shall not be used for any of the following:

(1) Rendition of a common carrier communications service, except stations carrying public correspondence associated with public coast stations licensed under part 80 may continue in operation for the balance of the term of their licenses and for an additional five-year renewal term.

(2) Transmission of program material for use in connection with broadcasting, except that:

(i) The facilities may be used to transmit program material from one location to another, provided that the operational-fixed frequencies do not serve as the final link in the chain of distribution of the program material to broadcast stations.

(ii) The facilities of closed circuit educational television systems that have been licensed to educational institutions may be utilized for the transmission of program material to noncommercial educational broadcast stations, provided that the use of the facilities exclusively for carrying such program material shall be less than 50 percent of their total use during any one year of the license period, no charge either direct or indirect shall be made for such use, and licensees shall submit reports with their applications for renewals showing the breakdown of usage in terms of primary and alternate uses during each year of the license term.

(iii) In the frequency bands above 21,000 MHz and in the frequency band 6425-6525 MHz, OFS licensees may deliver any of their own products or services to any receiving location.

(3) To provide the final link in the chain of transmission of program material to cable television systems, multipoint distribution systems, or master antenna TV systems, except in the frequency bands above 21,000 MHz and in the frequency band 6425-6525 MHz.

[40 FR 20928, May 13, 1975, as amended at 46 FR 27958, May 22, 1981; 48 FR 32585, July 18, 1983; 48 FR 50333, Nov. 1, 1983; 50 FR 13352, Apr. 4, 1985; 51 FR 31305, Sept. 1986; 52 FR 7146, Mar. 9, 1987]

§ 94.11 Points of communication.

(a) Stations authorized in this service may communicate with associated operational-fixed stations and fixed receivers and with units of associated stations in the mobile service licensed under Private Radio Service rule parts. In addition, intercommunication is permitted with other licensed stations and with U.S. Government stations in those cases which require cooperation or coordination of activities or when cooperative use arrangements in accordance with § 94.17 are contemplated; *provided, however*, that when communication is desired with stations authorized to operate under the authority of a foreign jurisdiction, prior approval of this Commission must be obtained; *And provided further*, That the authority under which such other stations operate does not prohibit the intercommunication.

(b) *Emergency communications*. During a period of emergency in which the normal communication facilities are disrupted as a result of hurricane, flood, earthquake, or similar disaster, stations may be used for emergency communications unrelated to the licensee's activities. The Commission may at any time order discontinuance of such special use of the authorized facilities.

[40 FR 20928, May 13, 1975, as amended at 44 FR 39181, July 5, 1979; 49 FR 367 Sept. 17, 1984]

§ 94.13 Interconnection of private operational-fixed microwave stations.

Stations authorized under this part may be interconnected with facilities of common carriers subject to applicable tariffs.

[40 FR 53396, Nov. 18, 1975]

§ 94.15 Policy governing the assignment of frequencies.

(a) Frequencies in this service are assignable to provide the full-period service required in most private systems, and assignments shall be protected from interference in the manner and to the extent prescribed in this subpart. However, where a fullriod service is not needed by the li- see, the same frequencies may be signed to another applicant in the ne area on a scheduled, time-shar- basis, provided that the applicant d existing licensees have filed a ne-sharing agreement with the Com- ssion.

b) Except as provided in § 94.25(k), applications for new or modified tions must contain an engineering alysis of the potential interference ween the proposed facilities and viously authorized facilities and nding applications. The application st contain as supplemental infor- tion:

1) A certification that based upon quency engineering analysis, the ential interference will not exceed t prescribed by the interference cri- ia in § 94.63; or

2) If the potential interference will eed that prescribed by § 94.63, a tement to the effect that all parties ected have agreed to accept the her level of interference.

3) In either case, the application st contain the names of the licens- and the call signs of the stations t were considered in conducting engineering analysis. Further, ap- ants and licensees will be expected cooperate promptly and fully in the hange of technical information essary to performing frequency en- eering analysis and, in the event of hnical differences, cooperate in re- ving these differences. Engineering lyses prepared pursuant to this tion shall include the FCC ID nber of the transmitter and the ke and model numbers for all an- nas the applicant proposes to use.

) Applicants for new facilities not ming a part of a previously author- l system shall select the frequency d having available frequencies ere the assignable bandwidth is st consistent with the proposed mmunication requirements. Applica- s shall contain supplemental infor- tion showing the basis for frequen- band selection, the basis for the dwidth requested, and the pro- ed schedule for implementation of dwidth utilization. Consistent with policy, each applicant normally be authorized one transmit frequency per path in each direction where full duplex operation is required. Additional frequencies per path may be authorized upon a showing that:

(1) The additional frequencies are required to accommodate the applicant's present and planned communications requirements; and technical factors preclude use of other bands. For the purposes of this requirement, technical factors to be considered in determining whether a frequency band is suitable for a proposed operation include: Reliability objectives of the applicant; propagation characteristics of the band; atmospheric conditions in the proposed area of operation, such as rainfall and extreme temperature changes that may affect propagation outages; total path length of the proposed system; availability of radio equipment (but not its cost); and the relative availability of frequencies in the band where frequencies are requested and in the band where greater assignable bandwidth is available; or

(2) Expansion of previously authorized systems beyond the capacity originally contemplated is required. However, in no event will bandwidth greater than that associated with the transmit frequency as provided in § 94.65 be authorized. In addition, video systems employing more than 10 MHz bandwidth per channel will not be authorized on frequencies below 12,000 MHz; provided that stations authorized before August 1, 1975, not complying with the provisions of this paragraph may continue to be authorized.

(d) Except as provided in paragraph (h) of this section, applicants will be assigned the frequencies listed in § 94.65. Operation on other than the listed frequencies may be authorized where it is shown that the objectives or requirements of the interference criteria prescribed in § 94.63 could not otherwise be met to resolve the interference problems. Also, operation on other than listed frequencies within a single standard bandwidth may be authorized where amplitude modulation techniques are used. Finally, on frequencies, bands above 10,000 MHz, operations on multiple transmitting frequencies may be authorized on a case-by-case basis within a single standard bandwidth.

(e) Except as provided in paragraph (h) of this section, frequencies will be assigned in pairs for those stations employing full-duplex transmission, with one of the frequencies designated as the station transmit frequency and the other as the receive frequency. Provision is made in some bands for use of both paired and unpaired frequencies for one-way operations. Applicants requesting the use of paired frequencies in the 932-932.5 and 941-941.5 MHz bands for one-way master station transmissions to four or more remote stations will be assigned a frequency in the 932-932.5 MHz band, if available, unless planned remotes are to be located beyond 48 kilometers from the master station. Except for the 932-932.5/941-941.5 MHz bands, assignment of a paired frequency for one-way operations will be made only upon a showing that spectrum efficiency will not be impaired and that unpaired frequencies are not available in other fixed spectrum. However, operation on frequencies not in accordance with the foregoing will be authorized only upon a showing that the interference criteria of this part could not be met or that an exception is required to prevent intrasystem interference.

(f) Except as provided in paragraph (h) of this section, applicants requiring more than one pair of frequencies at a single station location will be required to employ one end of the frequency band selected for all TRANSMIT frequencies at that location and the other end of the band for all RECEIVE frequencies at that location. However, exception to this requirement may be authorized upon a showing that the interference criteria of this part could not be met or that exception is required to prevent intrasystem interference.

(g) Except as provided in paragraph (h) of this section, applicants requiring multiple transmit frequencies employed on separate paths from a single station location will not normally be authorized more than four of the transmit frequencies available in the band. Further, master and remote stations using frequencies listed in § 94.65(a)(1) of this part will not normally be authorized more than four (12.5 KHz) frequencies or frequency pairs.

(h) Stations authorized before August 1, 1975, shall be exempt from paragraphs (d), (e), (f), and (g) of this section.

(i) Licensees and applicants for the point-to-multipoint channels in the 10.6 GHz and 18 GHz bands are not subject to the provisions of paragraphs (a) through (h) of this section.

(j) Applications filed pursuant to § 94.93 will not be subject to the provisions of paragraphs (a) through (h) of this section.

(Secs. 4(i), 301 and 303(r), Federal Communications Act of 1934, as amended, 47 U.S.C. 4(i), 301 and 303(r))

[40 FR 20928, May 13, 1975, as amended at 41 FR 52463, Nov. 30, 1976; 46 FR 9963, Jan. 30, 1981; 48 FR 50737, Nov. 3, 1983; 49 FR 36378, Sept. 17, 1984; 49 FR 37783, Sept. 2 1984; 51 FR 41630, Nov. 18, 1986; 52 FR 29857, Aug. 12, 1987; 53 FR 11857, Apr. 1 1988; 55 FR 9728, Mar. 15, 1990; 55 FR 10463, Mar. 21, 1990]

§ 94.17 Shared use of radio stations and the offering of private carrier communications service.

(a) Licensees of radio stations authorized under this part may share the use of their facilities on a non-profit basis or may offer service on a for-profit private carrier basis, subject to the following conditions and limitations:

(1) Persons or governmental entities licensed to operate radio systems on any of the frequencies set out in § 94.61(b) may share such systems with, or provide private carrier service to, any eligible for licensing under this part, regardless of individual eligibility restrictions enumerated in § 94.61(b), provided that the communications being carried are permissible under § 94.9.

(2) The licensee must maintain access to and control over all facilities authorized under its license.

(3) All sharing and private carrier arrangements must be conducted pursuant to a written agreement to be kept as part of the station records.

(4) The licensee must keep an up-to-date list of system sharers and private

carrier subscribers and the basis of their eligibility under part 94. Such records must be kept current and must be made available upon request for inspection by the Commission.

(b) Dominant common carriers may only share the use of their facilities on a non-profit basis and may not offer service on a for-profit private carrier basis.

[51 FR 10546, Mar. 27, 1986]

§ 94.19 Multiple licensing of radio transmitting equipment in the Private Operational-Fixed Microwave Radio Service.

Two or more persons or governmental entities eligible for licensing under this part may use the same transmitting equipment under the following terms and conditions:

(a) Each licensee complies with the general operating requirements set out in Subpart D of this part.

(b) Each licensee is eligible for the frequency(ies) on which the facility operates.

(c) Each licensee must have the ability to access the transmitter(s) which it is authorized to operate under the multiple licensing arrangement.

[50 FR 13352, Apr. 4, 1985]

Subpart B—Applications, Authorizations, and Notifications

§ 94.23 Station authorization required.

No radio transmitter shall be operated in this service except under and in accordance with a proper station authorization granted by the Federal Communications Commission.

§ 94.25 Filing of applications.

(a) Persons desiring to install and operate radio transmitting equipment must submit an application for a radio station authorization. To assure that necessary information is supplied in a consistent manner by all persons, standard forms are prescribed for use in connection with the majority of applications and reports submitted for Commission consideration. Standard numbered forms applicable to the private operational-fixed radio stations are described in § 94.27, and may be obtained from the Washington, DC office of the Commission, or from any of its engineering field offices. In matters where no standard form is applicable, the informal application procedure outlined in § 94.27 should be followed.

(b) For applications requiring a fee as set forth at part 1, subpart G of this chapter, the completed application package must be filed in accordance with § 0.401(b) of the rules. Applications not requiring a fee shall be filed with the Commission's offices in Gettysburg, PA and shall be addressed to: Federal Communications Commission, Gettysburg, PA 17326.

(c) Unless otherwise specified, an application shall be filed at least ninety days prior to the date on which it is desired that Commission action thereon be completed.

(d) Applications involving operation at temporary locations:

(1) An application for authority to operate a fixed station at temporary locations is required and shall specify the precise geographic area within which the operation will be confined. The area specified must be defined as a radius of operation about a given latitude/longitude or as a rectangular area bounded by upper and lower lines of latitude and longitude. Exception to this specific requirement may be made for exceptionally large areas, such as the continental United States. Sufficient data must be submitted to show the need for the proposed area of operation.

(2) If an operational-fixed station is authorized to be operated at temporary locations and actually remains, or is to remain, at the same location for a period of over a year, application for a separate authorization specifying the fixed location shall be made as soon as possible but not later than 30 days after the expiration of the one-year period.

(3) Operation of a fixed station at temporary locations will be authorized only on the frequency pair 6535/6575 MHz, and in frequency bands shared for operational fixed and mobile operations.

(e) Applications for point-to-multipoint frequencies in the 10.6 GHz and 18 GHz bands:

(1) A separate application form must be filed for each Nodal Station except for operations consistent with § 94.88. Each Nodal Station application must specify the service area that will be served by the station in terms of a distance radius or other geographical specification, and, if applicable, the Standard Metropolitan Statistical Area (SMSA) being served.

(2) If proposing a Digital Termination System, all applicants must submit as part of the original application a detailed plan indicating how the bandwidth requested will be utilized. In particular the application must contain detailed descriptions of the modulation method, the channel time sharing method, any error detecting and/or correcting codes, any spatial frequency reuse system and the total data throughput capacity in each of the links in the system. Further, the application must include a separate analysis of the spectral efficiency including both information bits per unit bandwidth and the total bits per unit bandwidth.

(f) In order to minimize possible harmful interference at the National Radio Astronomy Observatory site located at Green Bank, Pocohontas County, WV, and at the Naval Radio Research Observatory site at Sugar Grove, Pendleton County, WV, any applicant for a station authorization other than temporary-fixed seeking a station license for a new station or to modify an existing station in a manner which would change either the frequency, power, antenna height or directivity, or location of such a station within the area boarded by 39°15′ N on the north, 78°30′ W. on the eas 37°30′ N. on the south, and 80°30′ W on the west shall at the time of fili such application with the Commissio simultaneously notify the Director, National Radio Astronomy Observatory, Post Office Box No. 2, Green Bank, WV 24944, in writing, of the technical particulars of the proposed station. Such notification shall include the geographical coordinates of the antenna, antenna height, antenna directivity if any, proposed frequency, type of emission and power. In addition, the applicant shall indicate in his application to the Commission the date notification was made to the Observato After receipt of such applications, t Commission will allow a period twenty (20) days for comments or c jections in response to the notifi tions indicated. If an objection to t proposed operation is received duri the 20-day period from the Nation Radio Astronomy Observatory f itself or on behalf of the Naval Rad Research Observatory, the Commi sion will consider all aspects of th problem and take whatever action deemed appropriate.

(g) Protection for Table Mountai Radio Receiving Zone, Boulde County, CO. Applicants for a statio authorization to operate in the vicin ty of Boulder County, CO under th part are advised to give due conside ation, prior to filing applications, t the need to protect the Table Moun tain Radio Receiving Zone from harm ful interference. These are the re search laboratories of the Departmen of Commerce, Boulder County, CO. To prevent degradation of the present ambient radio signal level at the site the Department of Commerce seeks to ensure that the field strengths of any radiated signals (excluding reflected signals) received on this 1800 acre site (in the vicinity of coordinates 40°07′50″ N Latitude, 105°14′40″ W Longitude) resulting from new assignments or from the modification or relocation of existing facilities do not exceed 1 mV/m in the authorized bandwidth of service. (A field strength of 1 mV/m is equivalent to a power flux density of 85.6 dBW/M^2 assuming a free-space characteristic impendance of 376.7 ohms.)

(1) Advance consultation is recommended particularly for those applicants who have no reliable data which indicates whether the field strength or power flux density figures would be exceeded by their proposed radio facilities. In such instances, the following is a suggested guide for determining whether coordination is recommended:

(i) All stations within 2.4 km (1.5 statute miles);

(ii) Stations within 4.8 km (3 statute miles) with 50 watts or more effective radiated power (ERP) in the primary plane of polarization in the azimuthal direction of the Table Mountain Radio Receiving Zone;

(iii) Stations within 16 km (10 statute miles) with 1 kW or more ERP in the primary plane of polarization in the azimuthal direction of the Table Mountain Receiving Zone;

(iv) Stations within 80 km (50 statute miles) with 25 kW or more ERP in the primary plane of polarization in the azimuthal direction of the Table Mountain Receiving Zone.

(2) Applicants concerned are urged to communicate with the Radio Frequency Management Coordinator, Department of Commerce, Research Support Services, NOAA R/E5X2, Boulder Laboratories, Boulder, CO 80303; telephone (303) 497-6548, in advance of filing their applications with the Commission.

(3) The Commission will not screen applications to determine whether advance consultation has taken place. However, applicants are advised that such consultation can avoid objections from the Department of Commerce or proceedings to modify any authorization which may be granted which, in fact, delivers a signal at the site in excess of the field strength specified herein.

(h) Applications for authorizations to construct microwave operational-fixed radio stations for transmission of program material to cable television systems will not be accepted, except in the frequency bands above 21,200 MHz.

(i) Protection for Federal Communications Commission monitoring stations:

(1) Applicants in the vicinity of an FCC monitoring station for a radio station authorization to operate new transmitting facilities or changed transmitting facilities which would increase the field strength produced over the monitoring station over that previously authorized are advised to give consideration, prior to filing applications, to the possible need to protect the FCC stations from harmful interference. Geographical coordinates of the facilities which require protection are listed in § 0.121(c) of the Commission's Rules. Applications for stations (except mobile stations) which will produce on any frequency a direct wave fundamental field strength of *greater than 10 mV/m* in the authorized bandwidth of service (−65.8 dBW/m^2 power flux density assuming a free space characteristic impedance of 120 ohms) at the referenced coordinates, may be examined to determine extent of possible interference. Depending on the theoretical field strength value and existing root-sum-square or other ambient radio field signal levels at the indicated coordinates, a clause protecting the monitoring station may be added to the station authorization.

(2) In the event that calculated value of expected field exceeds 10 mV/m (−65.8 dBW/m^2) at the reference coordinates, or if there is any question whether field strength levels might exceed the threshold value, advance consultation with the FCC to discuss any protection necessary should be considered. Prospective applicants may communicate with: Chief, Field Operations Bureau, Federal Communications Commission, Washington, DC 20554, Telephone (202) 632-6980.

(3) Advance consultation is suggested particularly for those applicants who have no reliable data which indicates whether the field strength or power flux density figure indicated would be exceeded by their proposed radio facilities (except mobile stations). In such instances, the following is a suggested guide for determining whether an applicant should coordinate:

(i) All stations within 2.4 kilometers (1.5 statute miles);

(ii) Stations within 4.8 kilometers (3 statute miles) with 50 watts or more average effective radiated power (ERP) in the primary plane of polarization in the azimuthal direction of the Monitoring Stations.

(iii) Stations within 16 kilometers (10 statute miles) with 1 kW or more average ERP in the primary plane of polarization in the azimuthal direction of the Monitoring Station;

(iv) Stations within 80 kilometers (50 statute miles) with 25 kW or more average ERP in the primary plane of polarization in the azimuthal direction of the Monitoring Station;

(4) Advance coordination for stations operating above 1000 MHz is rec-

pages tightly bound

ommended only where the proposed station is in the vicinity of a monitoring station designated as a satellite monitoring facility in § 0.121(c) of the Commission's rules and also meets the criteria outlined in paragraphs (i)(2) and (3) of this section.

(5) The Commission will not screen applications to determine whether advance consultation has taken place. However, applicants are advised that such consultation can avoid objections from the Federal Communications Commission or modification of any authorization which will cause harmful interference.

(j) For stations operating on frequencies listed in § 94.65(a)(1) of this part, applications may include any number of remote stations in a single application, but must specify the geographic service area of the applicant in which these remote stations will be located. A separate application must be filed for each fixed master station. Applications for mobile operations or for systems employing only remote stations must designate a reference point (set of coordinates) at or near the center of the area being served.

(k) Applications for frequencies in the 932-935 and 941-944 MHz bands shall be filed during an initial one-week period, to be specified by Commission public notice. During this initial filing period, applicants must perform frequency coordination only to the extent of protecting existing grandfathered broadcast auxiliary stations in the 942-944 MHz band. After this initial filing period, applications for the 932-935/941-944 MHz bands will not be accepted until further public notice is given by the Commission. During the initial filing period, applications for frequencies in the 932-932.5 and 941-941.5 MHz bands need not specify the exact frequency, but thereafter must include the specific frequency requested. All applications for frequencies in the 932.5-935 and 941.5-944 MHz bands must specify the frequency requested.

(Secs. 4, 303, 307, 48 Stat., as amended, 1066, 1082, 1083; 47 U.S.C. 154, 303, 307)

[40 FR 20928, May 13, 1975, as amended at 42 FR 27895, June 1, 1977; 44 FR 77167, Dec. 31, 1979; 46 FR 9954, Jan. 30, 1981; 48 FR 1973, Jan. 17, 1983; 48 FR 32585, July 18, 1983; 49 FR 36378, Sept. 17, 1984; 50 39004, Sept. 26, 1985; 52 FR 10232, Mar. 1987; 52 FR 29857, Aug. 12, 1987; 53 11857, Apr. 11, 1988; 55 FR 9728, Mar. 1990; 55 FR 10464, Mar. 21, 1990]

§ 94.27 Application and standard forms

(a) A separate application shall submitted on FCC Form 402 da August 1985 or later, for the followi

(1) New station authorization private operational-fixed microwa station.

(2) New authorization to operate o or more fixed stations at temporary cations in this service.

(3) Modification of station license.

(4) [Reserved]

(5) New station authorization modification of license for each mast station of a system consisting of master station and its associat remote stations.

(6) The Commission's consent to th assignment of an authorization to a other person or entity. In addition, th application shall be accompanied by signed letter from proposed assign stating the desire to assign all righ title, and interest in and to such a thorization, stating the call sign an location of the station, and that th assignor will submit its current statio authorization for cancellation upo completion of the assignment. For 1046 may be used in lieu of this lette (See also § 94.47.)

(b) [Reserved]

(c) A separate application shall b submitted on FCC Form 703 wheneve it is proposed to change, as by transfe of stock ownership, the control of a li censee.

(d) Informal application—an applica tion not submitted on a standard form prescribed by the Commission is con sidered to be an informal application Each informal application, normally in letter form, properly signed, shall be clear and complete within itself as to the facts presented and the action desired.

(e) Application for renewal of station licenses shall be submitted on such form as the Commission may designate by public notice. Applications for renewal must be made during the license term and should be filed within 90 days, but not later than 30 days.

prior to the end of the license term. When a licensee submits a timely application for renewal of a station license, the existing license for that station shall continue as a valid authorization until the Commission has made a final decision on the application.

(Secs. 4, 308, 48 Stat., as amended, 1066, 1084 (47 U.S.C. 154, 308))

[40 FR 20928, May 13, 1975, as amended at 41 FR 20679, May 20, 1976; 41 FR 50690, Nov. 17, 1976; 46 FR 9954, Jan. 30, 1981; 48 FR 1973, Jan. 17, 1983; 51 FR 2704, Jan. 21, 1986; 51 FR 4596, Feb. 6, 1986; 52 FR 29857, Aug. 12, 1987]

§ 94.29 Who may sign applications.

(a) Except as provided in paragraph (b) of this section, applications, amendments thereto, and related statements of fact required by the Commission shall be personally signed by the applicant, if the applicant is an individual; by one of the partners if the applicant is a partnership; by an officer or duly authorized employee, if the applicant is a corporation; or by a member who is an officer, if the applicant is an unincorporated association. Applications, amendments, and related statements of fact filed on behalf of eligible governmental entities shall be signed by such duly elected or appointed officials as may be competent to do so under the laws of the applicable jurisdiction.

(b) Applications, amendments thereto, and related statements of fact required by the Commission may be signed by the applicant's attorney in case of the applicant's physical disability or of his absence from the United States. The attorney shall, in that event, separately set forth the reason why the application is not signed by the applicant. In addition, if any matter is stated on the basis of the attorney's belief only (rather than his knowledge) he shall separately set forth his reasons for believing that such statements are true.

(c) Only the original of applications, amendments, or related statements of fact need be signed; copies may be conformed.

(d) Applications, amendments, and related statements of fact need not be signed under oath. Willful false statements made therein, however, are punishable by fine and imprisonment, U.S. Code Title 18, section 1001, and by appropriate administrative sanctions, including revocation of station license pursuant to section 312(a)(1) of the Communications Act of 1934, as amended.

[40 FR 20928, May 13, 1975, as amended at 43 FR 27992, June 28, 1978]

§ 94.31 Supplemental information to be submitted with application.

Each application for a new or modified station authorization shall be accompanied by the supplemental information listed below.

(a) Any statements or showings required by § 94.15 or § 94.63;

(b) A functional system diagram and a detailed description of the manner in which the interrelated stations will operate when the station is, or will be, part of a system involving two or more stations at different fixed locations;

(c) Copies of all agreements and statements which may be required under § 94.17 if operation is desired in connection with any cooperative use of the proposed radio communication facilities;

(d) Statements required by the rules in connection with developmental operation (See subpart E of this part);

(e) Data required by the rules in connection with operation of fixed stations at temporary locations (See § 94.25(d));

(f) Any statements or other data required under special circumstances as set forth in this part, or required upon request by the Commission;

(g) [Reserved]

(h) Information required by part 17 of the Commission's rules concerning "Construction, Marking, and Lighting of Antenna Structures";

(i) The environmental assessment required by §§ 1.1307 and 1.1311 of the rules, if applicable.

(j) When an applicant proposes to distribute its own products or services to customers using operational-fixed frequencies in the bands below 21,200 MHz, a statement which specifically describes the nature of the products or services to be distributed.

(k) For applications involving fixed multiple address system master stations, the antenna height above average terrain (HAAT). See § 90.309 for determining HAAT.

[40 FR 20928, May 13, 1975; 40 FR 26677, June 25, 1975, as amended at 48 FR 32585, July 18, 1983; 49 FR 36378, Sept. 17, 1984; 51 FR 15003, Apr. 22, 1986; 52 FR 29857, Aug. 12, 1987; 53 FR 11857, Apr. 11, 1988]

§ 94.33 Preliminary processing of applications.

(a) Applications received for filing are given a file number. The assignment of a file number to an application is for administrative convenience and does not indicate the acceptance of the application for filing and processing.

(b) Applications which are incomplete with respect to answers, supplementary statements, execution, or other matters of a formal character shall be deemed to be defective and may be returned to the applicant with a brief statement as to such defects. In addition, if an applicant is requested by the Commission to file any additional documents or information not included in the prescribed application form, failure to comply with such request will be deemed to render the application defective, and such application may be dismissed. Applications will also be deemed to be defective and may be returned to the applicant in the following cases:

(1) Statutory disqualification of applicant;

(2) Proposed use or purpose of station would be unlawful;

(3) Requested frequency is not allocated for assignment for the service proposed.

(c) Applications which are not in accordance with the provisions of this chapter, or other requirements of the Commission, will be considered defective and may be dismissed unless accompanied by a request of the applicant for waiver of, or exception to, any rule, regulation, or requirement with which the application is in conflict. Such request shall show the nature of the waiver or exception desired, and set forth the reasons in support thereof to include a showing that unique circumstances are involved and that there is no reasonable alternative solution within existing rules. Applications may be dismissed if the accompan
petition for waiver of rules does
set forth reasons which, sufficie
true, would justify a waiver or ex
tion.

(d) Any application which has
returned to the applicant for co
tion will be processed in original
of receipt when resubmitted if it
ceived within 30 days (45 days out
Continental United States) from
date on which it was returned to
applicant. If the application is no
submitted within the prescribed
it will be treated as a new applica
and considered at the time other
plications received on the same
are considered.

§ 94.35 Amendment or request for dis
sal of application.

(a) Any application, except for
tually exclusive applications or th
against which a petition to deny
been filed, may be amended a
matter of right at any time prior
the time the application is granted
designated for hearing. Each ame
ment to an application shall be sig
and submitted in the same manne
required for the original applicat
The procedures for amending appl
tions mutually exclusive under
part, applications against which a p
tion to deny has been filed, and ap
cations designated for hearing are
forth in § 1.918 of this chapter.

(b) Any application may, upon w
ten request signed by the applicant
his attorney, be dismissed with
prejudice as a matter of right prior
the time the application is granted
designated for hearing.

§ 94.37 Grant of application without he
ing.

(a) The Commission will grant wi
out a hearing an application for a s
tion authorization if it is proper up
its face and if the Commission fin
from an examination of such applic
tion and supporting data, any pleadi
filed, or other matters which it m
officially notice, that:

(1) There are no substantial and m
terial questions of fact;

(2) The applicant is qualified;

(3) A grant of the application would not involve modification, revocation, or non-renewal of any existing license;

(4) A grant of the application would not preclude the grant of any mutually exclusive application; and

(5) A grant of the application would serve the public interest, convenience, and necessity.

(b) If a petition to deny an application has been filed pursuant to § 1.962 and the Commission grants such application pursuant to paragraph (a) of this section, the Commission will deny the petition and issue a concise statement of the reason for such denial and disposing of all substantial issues raised by the petition. (See § 1.973 of this chapter, as to applications designated for hearing.)

(c) All applications in pending status will be processed in the order in which the application acceptable for filing was received by the Commission; provided, however, that if there are more applications than can be accommodated on available frequencies, the Commission may grant the applications pursuant to the system of random selection prescribed in § 1.972 of this chapter.

[40 FR 20928, May 13, 1975, as amended at 48 FR 27207, June 13, 1983]

§ 94.39 License term.

(a) Licenses for stations in this service will normally be issued for a term of five years from the date of original issuance, modification, or renewal, except that, in some instances, a term of from one to five years will be applied, the term varying as may be necessary to permit the orderly scheduling of renewal applications.

(b) Authorizations for stations engaged in developmental operation under subpart E of this part will be issued upon a temporary basis for a specific period of time, but in no event to extend beyond one year from date of original issuance, modification or renewal.

§ 94.41 Partial grant of applications.

Where the Commission, without a hearing, grants any application in part, or with any privilege, terms or conditions other than those requested, or subject to any interference that may result to a station if designated application or applications are subsequently granted, the action of the Commission shall be considered as a grant of such application unless the applicant shall, within 30 days from the date on which such grant is made or from its effective date if a later date is specified, file with the Commission a written request rejecting the grant as made. Upon receipt of such request, the Commission will vacate its original action upon the application and set the application for hearing in the same manner as other applications are set for hearing. (See § 1.973 of this chapter as to applications designated for hearing.)

§ 94.43 Procedure for obtaining special temporary authority.

Authorizations in this service are granted in accordance with procedures set forth in this subpart. Therefore, temporary authorizations which depart from these procedures will not normally be considered except as specified below:

(a) Special temporary authorization may be granted upon a written request (See requirements for informal applications in § 94.27(d).) in the following circumstances:

(1) In emergency situations;

(2) To permit restoration or relocation of existing facilities to continue communication services;

(3) To conduct tests to determine necessary data for the preparation of an application for regular authorization;

(4) For a temporary non-recurring service where a regular authorization is not appropriate.

(5) In other situations involving circumstances which are of such an extraordinary nature that delay in the institution of temporary operation would seriously prejudice the public interest.

(b) The commission may grant requests for special temporary authority without issuing the public notice provided for in § 1.962 of this chapter for periods not exceeding 180 days, if there are extraordinary circumstances supporting the request and where delay in commencing temporary operation would seriously prejudice the public interest. Requests for special temporary authorization not involving extraordinary circumstances may be granted without public notice for a period of 30 days where an application for regular operation is not contemplated or for 60 days pending or after the filing of an application for regular operation.

(c) Request for special temporary authority shall contain the following information:

(1) Name, address, and citizenship status of applicant;

(2) Need for special action, including a description of any emergency or damage to equipment;

(3) Type of operation to be conducted;

(4) Purpose of operation;

(5) Time and date of operation desired;

(6) Class of station and nature of service;

(7) Location of station and points with which station will communicate;

(8) Equipment to be used, specifying manufacturer, model number, and number of units;

(9) Frequency(s) desired;

(10) Azimuth and beamwidth of major lobe of transmitting antenna and ERP;

(11) Type of emission;

(12) Description of antenna to be used, including height.

[40 FR 20928, May 13, 1975, as amended at 48 FR 1973, Jan. 17, 1983]

§ 94.45 Changes in authorized station requiring modification.

(a) Modification of license or special temporary authority in accordance with § 94.43 is required for the following changes in authorized stations:

(1) Any change in frequencies used;

(2) Any change in antenna azimuth;

(3) Any change in antenna beamwidth;

(4) Any change in antenna or passive repeater location greater than 1 second or which involves a requirement for special aeronautical study;

(5) Any change in antenna polarization;

(6) Any change in antenna height;

(7) Any change in the size of passive reflectors or repeaters associated with the facilities of an authorized station;

(8) Any increase in emission bandwidth beyond that authorized;

(9) Any change in the type of emission;

(10) Any change in authorized effective radiated power in excess of 3dB (a 2-to-1 ratio);

(11) Substitution of equipment having different frequency tolerance.

(b) When the name of the licensee is changed (without changes in the ownership, control, or corporate structure), or when the mailing address is changed (without changing the authorized location of the fixed station) a formal application for modification of license is not required. However, the licensee shall notify the Commission promptly of these changes. The notice, which may be in letter form, shall contain the name and address of the licensee as they appear in the Commission's records, the new name and/or address as the case may be, the call signs and classes of all radio stations authorized to the licensee under this part and the radio service in which each station is authorized. The notice shall be sent to the Federal Communications Commission, Gettysburg, PA 17325 and a copy shall be maintained with the license of each station until a new license is issued.

[40 FR 20928, May 13, 1975, as amended at 52 FR 29857, Aug. 12, 1987]

§ 94.47 Transfer and assignment of station authorization.

(a) A station authorization, and the rights therein granted by such authorization, shall not be transferred, assigned, or in any manner either voluntarily or involuntarily disposed of, or indirectly disposed of by transfer of control of any corporation holding such authorization, to any person unless the Commission shall, after securing full information, advise that said transfer is in the public interest. (See § 94.27(b) for standard forms and procedures required for assignment of station licenses.)

(b) A license to operate a station authorized under this part may not be assigned or transferred prior to the completion of construction of the facility. However, the Commission may give its consent to the assignment or transfer of control of such a license prior to the completion of construction where:

(1) The assignment or transfer does not involve a substantial change in ownership or control of the authorized radio facilities; or,

(2) The assignment or transfer is involuntary due to the licensee's bankruptcy or death.

[50 FR 13352, Apr. 4, 1985]

§ 94.49 Report of temporary location.

The Engineer in Charge of each radio district wherein temporary operation by an operational fixed station is authorized shall be notified of such inter-district operating authority only at such time as the initial or modified authorization for such operation is granted by the Commission. (See § 0.121 of this chapter for description of Radio District boundaries and for addresses of Engineers in Charge.)

§ 94.51 Time in which station must be in operation.

(a) Except as provided in paragraphs (b) and (c) of this section, a station authorized under this part must be in operation within 12 months from the date of grant or the authorization cancels automatically and must be returned to the Commission. Requests for extension may be granted upon a showing of good cause, setting forth in detail the applicant's reasons for failure to have the facility operating in the prescribed 12-month period. Such requests must be submitted no later than 30 days prior to the end of the 12-month period to the Commission's offices in Gettysburg, PA and shall be addressed to: Federal Communications Commission, Gettysburg, PA 17325.

(b) Stations licensed on point-to-multipoint frequencies in the 10.6 GHz and 18 GHz bands must be completely constructed and fully operational in accordance with their most recent application within 18 months of grant, or the authorizations for stations not meeting the above cancel automatically and must be returned to the Commission.

(c) Stations authorized under § 94.93 must be in operation within 36 months from the date of grant or the authorization cancels automatically and must be returned to the Commission.

[55 FR 9728, Mar. 15, 1990]

§ 94.53 Discontinuance of station operation.

In case of permanent discontinuance of a station licensed under this part, the licensee shall forward the station license to the Federal Communications Commission, Gettysburg, PA 17325, for cancellation. For purposes of this section, any station which has not operated for one year or more is considered to have been permanently discontinued.

[49 FR 36378, Sept. 17, 1984]

§ 94.57 Continued operation subsequent to modification.

Operation in accordance with the provisions of an authorization which has been modified may be continued until such modifications can be implemented, *provided* that the provisions of §§ 94.51 and 94.53 are met.

Subpart C—Technical Standards

§ 94.61 Applicability.

(a) The technical standards of this subpart shall govern the issuance of authorizations for new stations and changes in authorized stations as specified in § 94.45. Except as provided for in § 94.65, licensees of transmitting equipment (including antennas) authorized prior to July 1, 1976, including their successors or assigns in business, will be permitted to utilize such equipment, in accordance with the standards indicated in § 94.92, provided that the operation of this equipment does not cause interference in excess of the levels specified in § 94.63 to another operational-fixed station or, in the 12,200-12,700 MHz band, to a direct broadcast satellite system. In case of such interference, the licensee of the non-conforming equipment may be required to install equipment which fully conforms to the technical standards of this subpart.

(b) Frequencies in the following bands are available for assignment to stations in the Private Operational-Fixed Service:

FREQUENCY BAND (MHz)

928–929	(19) and (20).
932 to 932.5	(32).
932.5 to 935	(33).
941 to 941.5	(32).
941.5 to 944	(33) and (34).
952 to 960	(1) and (20).
1850 to 1990	(2).
2130 to 2150	(2) and (21).
2150 to 2160	(3)
2180 to 2200	(2) and (21).
2450 to 2500	(4) and (21).
2500 to 2690	(5) and (22).
6425 to 6525	(30) and (31).
6525 to 6575	(28)
6575 to 6625	(2) and (28).
6625 to 6875	(2) (8) and (28).
10,550 to 10,680	(24)
12,200 to 12,500	(2) (21) (25)
12,500 to 12,700	(2) (6) (21) (25)
12,700 to 13,200	(26)
13,200 to 13,250	(9) (14) (21)
17700 to 18580	(6) (8) (10) (21) (27).
18580 to 18820	(10) (17) (21).
18820 to 18920	(21) (24)
18920 to 19160	(10) (17) (21).
19160 to 19260	(21) (24).
19260 to 19700	(10) (21) (27).
21,200 to 22,000	(10), (11), (12), (13) and (23).
22,000 to 23,600	(10), (12), (13) and (23)
31,000 to 31,300	(23), (29).
38,600 to 40,000	(9), (16) and (23)
Bands above 40,000	(16) and (23)

[1] Frequencies in this band are shared with stations in the International Fixed (in Puerto Rico and the Virgin Islands) and International Control Services. (Part 23)

[2] Frequencies in this band are shared with stations in the International Control Service (part 23).

[3] Frequencies in this band are shared with stations in the Multipoint Distribution Service (part 21). These frequencies may be used for the transmission of the licensee's products and information services, excluding video entertainment material, to the licensee's customers.

[4] Frequencies in this band are shared with mobile and radiolocation stations in other services, and must accept harmful interference that may be experienced from operations of industrial, scientific, or medical (ISM) equipment operating on 2450 MHz. In the 2483.5–2500 MHz band, no applications for new stations or modifications to existing stations to increase the number of transmitters will be accepted. Existing licensees as of July 25, 1985, or on a subsequent date following as a result of submitting an application for license on or before July 25, 1985, are grandfathered and their operation is co-primary with the radiodetermination Satellite Service. However, all grandfathered temporary fixed licensees are required to notify directly each Radiodetermination Satellite Service licensee concerning present and proposed locations of operation.

[5] Frequencies in this band are shared with earth stations in the Fixed Satellite Service (part 25), space stations in the Broadcasting Satellite Service (part 25), and with stations in the Instructional Television Fixed Service (ITFS) (part 74). Stations licensed under part 94 are restricted to the three group H channels, 2650–2656 MHz, 2662–2668 MHz and 2674–2680 MHz; and the three response frequencies, 2686.9375, 2687.9375, and 2688.9375 MHz.

[6] Frequencies in this band are shared with Earth (Earth-to-space) stations in the Fixed Satellite Service. (part 25)

[7] [Reserved]

[8] Frequencies in this band are shared with spac
to-Earth) stations in the Fixed Satellite Service.

[9] This band is shared with fixed and mobile sta
ations authorized under other services.

[10] Frequencies in this band are shared with fixe
in the Domestic Public Radio Services. (part 21)

[11] Frequencies in this band are shared with spac
to-Earth) stations in the Earth Exploration Satellite
(part 25)

[12] Authorizations are normally granted only to
carriers (part 21) in the band segments 21.2–21.8
22.4–23.00 GHz, and to operational-fixed users (p
the segments 21.8–22.4 GHz and 23.0–23.6 GH
service assignments for these users may be made
a showing that no interference-free frequencies are
in the appropriate band segments. Frequencies in
22.0 GHz and 23.0–23.2 GHz band segments
authorized to operational fixed users under the pro
§ 94.91.

[13] This frequency band is shared with U.S. Gov
Stations.

[14] Frequencies in this band are shared with statio
Television Auxiliary Broadcast Service (part 74),
Television Transmission Service (part 21) and the
Point Microwave Service (part 21).

[16] Available on developmental basis only under S
of this part.

[17] Frequencies in this band are shared with
internodal links, Point-to-Point Microwave Service
and point-to-point return radio links for MDS station
part 21 rules and (2) aural broadcasts STL and interc
stations under part 74 rules.

[18] These frequencies are assigned for use within a
gular service area to be described in the application
maximum and minimum latitudes and longitudes. Su
ice area shall be as small as practicable consistent
local service requirements of the user. The use o
frequencies is subject to the terms and conditions
in § 21.711. These frequencies shall be assigned onl
it is shown that the applicant will have a reasonable
ed requirement for a multiplicity of service points or tr
sion paths within the area.

[19] Frequencies in this band are paired with the b
952–953 MHz and are limited for use by multiple a
remote stations.

[20] The frequencies in this band which are allocated
94 multiple address systems are available for point-to
point transmission of the licensee's products and info
services, excluding video entertainment material, to
censee's customers. Other frequencies in this ban
available for the point-to-point transmission of the lic
products and information services, excluding video ent
ment material, to the licensee's customers.

[21] This band is available for radio systems to be u
the point-to-point transmission of the licensee's produc
information services, excluding video entertainment m
to the licensee's customers.

[22] This band is available for radio systems to be us
the point-to-multipoint transmission of the licensee's pro
and information services to the licensee's customers.

[23] This band is available for radio systems to be us
the point-to-point transmission of the licensee's pro
material or services to the licensee's customers.

[24] Frequencies in this band are shared with the Com
Carrier services for Digital Termination Systems. The
able frequencies are indicated in § 94.65.

[25] Frequencies in this band have been allocated to
Direct Broadcast Service and are authorized for Opera
Fixed use only pursuant to § 94.93.

[26] Frequencies in this band are only available for ap
tions filed pursuant to § 94.93.

[27] Frequencies in this band are shared with Broa
Auxiliary, and Cable Television Relay services.

[28] This band is also available for applications filed pur
to § 94.93.

[29] Frequencies in this band are co-equally shared
stations in the Domestic Public Fixed (part 21), Au
Broadcasting (part 74), Cable Television Relay (part 78)
General Mobile Radio (part 95) Services.

[30] This band is co-equally shared with mobile sta
licensed pursuant to parts 21, 74 and 78 of the Com
sion's Rules.

[31] Use of this spectrum for direct delivery of video p
grams to the general public or multi-channel cable
tion is not permitted.

[32] Frequencies in the 932 to 932.5 MHz and 941 to 94
MHz bands are shared with Government fixed point

multipoint stations and point-to-multipoint stations in the Public Land Mobile Service (part 22). Frequencies in these bands are paired with one another and are available for point-to-multipoint transmission of the licensee's products and information services, excluding video entertainment material, to the licensee's customers.

[13] Frequencies in the 932.5 to 935 MHz and 941.5 to 944 MHz bands are shared with Government fixed point-to-point stations and stations in the Point-to-Point Microwave Radio Service (part 21). Frequencies in these bands are paired with one another.

[14] Frequencies in the 942 to 944 MHz band are also shared with broadcast auxiliary stations (part 74).

(Secs. 4, 303, 48 Stat., as amended, 1066 1082, 1083 (47 U.S.C. 154, 303, 307); secs. 4(i), 301 and 303(r), Federal Communications Act of 1934, as amended, 47 U.S.C. 4(i), 301 and 303(r))

[40 FR 20928, May 13, 1975]

Editorial Note: For Federal Register citations affecting § 94.61, see the List of CFR Sections Affected in the Finding Aids section of this volume.

§ 94.63 Interference protection criteria for operational fixed stations.

(a) Before filing an application for new or modified facilities under this part, the applicant must perform a frequency engineering analysis to assure that the proposed facilities will not cause interference to existing or previously applied-for stations in this service of a magnitude greater than that specified in the criteria set forth in paragraph (b) of this section, unless otherwise agreed to in accordance with § 94.15(b). As an exception to the above requirement, when the proposed facilities are to be operated in the bands 932-935 MHz, 941-944 MHz, 10,550-10,680 MHz, 17,700-19,700 MHz, 21,200-21,800 MHz, 22,400-23,000 MHz, or 38,600-40,000 MHz (excluding those frequencies set out in § 94.189), applicants shall follow the prior coordination procedure specified in § 21.100(d) of this chapter. In addition, when the proposed facilities are to be operated in the bands 2655-2690 MHz, or 12,500-12,700 MHz, applications shall also follow the procedures in §21.706 (c) and (d) and the technical standards and requirements of part 25 of this chapter as regards licensees in the Communication-Satellite Service. See also § 94.77.

(b) The interference protection criteria for operational-fixed stations, other than those licensed on frequencies set out in §§ 94.65(a)(1), 94.65(i)(1), 94.65(j)(8), 94.90, and 94.91 are as follows:

(1) To long-haul analog systems, employing frequency modulated radio and frequency division multiplexing to provide multiple voice channels, the allowable interference level per exposure:

(i) Due to co-channel sideband-to-sideband interference shall not exceed 5 pwpO;[1]

(ii) Due to co-channel carrier-beat interference shall not exceed 50 pwpO.

(2) To short-haul analog systems employing frequency modulated radio and frequency division multiplexing to provide multiple voice channels, the allowable interference level per exposure:

(i) Due to co-channel sideband-to-sideband interference shall not exceed 25 pwpO except in the 952-960 MHz band interference into single link fixed relay and control stations shall not exceed 250 pwpO exposure.

(ii) Due to co-channel carrier-beat interference shall not exceed 50 pwpO except in the 952-960 MHz band interference into single link fixed relay and control stations shall not exceed 1000 pwpO per exposure.

(3) *FM-TV.* In analog systems employing frequency modulated radio that is modulated by a standard, television (visual) signal, the allowable interference level per exposure shall not exceed the levels which would apply to a long-haul or short-haul FM-FDM systems, as outlined in paragraphs (b)(1) and (2) of this section, having a 600-1200 voice channel capacity.

(c) In addition to the requirements of paragraph (b) of this section the adjacent channel interference protection criteria to be afforded, regardless of system length, or type of modulation, multiplexing, or frequency band, shall be such that the interfering signal shall not produce more than 1.0 dB degradation of the practical threshold of the protected receiver.

(d) *Applying the Criteria.* (1) The criteria specified in paragraphs (b) and (c) of this section shall be applied by calculating the ratio in dB between the desired (carrier) signal and the undesired (interfering) signal (C/I ratio) appearing at the input to the receiver under investigation (victim receiver).

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[1] Picowatts (pwpO) of absolute noise power, psophometrically weighted, appearing in an equivalent voice band channel of 300-3400 Hz.

(2) The development of the C/I ratios from the criteria and the methods employed to perform path calculations shall follow generally acceptable good engineering practices. Procedures as may be developed by the Electronics Industries Association (EIA), the Institute of Electrical and Electronics Engineers, Inc. (IEEE), the American National Standards Institute (ANSI) or any other recognized authority will be acceptable to the Commission.

(3) Except as provided in §§ 94.90 and 94.91, where the applicant's proposed facilities are of a type not included in paragraph (b) of this section or where the development of the carrier-to-interference (C/I) ratio is not covered by generally acceptable procedures, or where the applicant does not wish to develop the carrier-to-interference ratio, the applicant shall, in the absence of criteria or a developed C/I ratio, employ the following C/I protection ratios:

(i) Co-channel interference: Both sideband and carrier-beat, applicable to all bands; the existing or previously authorized system shall be afforded a carrier to interfering signal protection ratio of at least 90 dB except in the 952-960 MHz band where it shall be 75 dB.

(ii) Adjacent channel interference: Applicable to all bands; the existing or previously authorized system shall be afforded a carrier to interfering signal protection ratio of at least 56 dB.

(4) Applicants for frequencies listed in § 94.65(a)(1) shall make the following showings that protection criteria have been met over the entire service area of existing systems. Such showings may be made by the applicant or may be satisfied by a statement from a Frequency Advisory Committee. For frequencies available to more than one service, the Frequency Advisory Committee shall affirmatively show that coordination with similar Committees for the other services has been accomplished.

(i) For multiple address stations in the 928-929/952-960 MHz bands, a statement that the proposed system
complies with the following c
nel separations from all exist
tions and pending applications:

Fixed-to-fixed	145 Km (90 miles)
Fixed-to-mobile	113 Km (70 miles)
Mobile-to-mobile	81 Km (50 miles)

Multiple address systems em
only remote stations will be tre
mobile for the purposes of de
ing the appropriate separatio
mobile operation, the mileage i
ured from the reference point
fied on the license application.

(ii) For multiple address stat
the 932-932.5/941-941.5 MHz b
statement that the proposed
complies with the following c
nel separation from all existi
tions and pending applications:

Fixed-to-fixed	113 Km (70 miles)

(iii) In cases where the geog
separation standard in par
(d)(4)(i) of this section is not fol
an engineering analysis will be s
ted to show the coordination
proposed assignment with existi
tems located closer than those
ards. The engineering analyses
clude:

(A) Specification of the interf
criteria and system parameters u
the interference study.

(B) Nominal service areas of
system included in the interf
analysis.

(C) Modified service areas res
from the proposed system. The
gation models used to establis
service boundary limits must be
fied and any special terrain fe
considered in computing the int
ence impact should be described.

(D) A statement that all parti
fected have agreed to the engine
analysis and will accept the calcu
levels of interference.

(5) Multiple address frequenci
the 956 MHz band may be assigne
use by mobile master stations on
mary basis. Multiple address fre
cies in the 952 MHz band may b
signed for use by mobile master
tions on a case-by-case basis. M
operation in the 952 MHz band
be on a secondary basis to fixed
ations.

(6) Each application for new or modified nodal station on channels numbered 4A, 4B, 7, 9, and 19/20 in the 10.6 GHz band and all point-to-multipoint channels in the 18 GHz band shall demonstrate that all existing co-channel stations are at least 56 kilometers from the proposed nodal station site. Applicants for these channels must certify that all licensees and applicants for stations on the adjacent channels within 56 kilometers of the proposed nodal station have been notified of the proposed station and do not object. Alternatively, or if one of the affected adjacent channel interests does object, the applicant may show that all affected adjacent channel parties are provided a C/I protection ratio of 0 dB. An applicants proposing to operate at an AAT greater than 91 meters must reduce its EIRP in accordance with the following table; however, in no case shall EIRP exceed 70 dBm on the 10.6 GHz channels.

AAT (in meters):	*EIRP* dBm
Above 300	+38
251 to 300	41
201 to 250	43
151 to 200	49
101 to 150	55
100 and below	65

(7) Each application for new or modified nodal station on channels numbered 21, 22, 23, and 24 in the 10.6 GHz band shall include an analysis of the potential for harmful interference to all other licensed and previously applied for co-channel and adjacent channel station located within 80 kilometers of the location of the proposed station. The criteria contained in § 94.63(d)(3) shall be used in this analysis. Applicants must certify that copies of this analysis have been served on all parties which might reasonably be expected to receive interference above the levels set out in § 94.63(d)(3) within 5 days of the date the subject application is filed with the Commission.

(e) An applicant filing for a modification of an existing station under the provisions of § 94.45 need not perform the interference protection analyses required by this section if the only modifications made to the station are one or more of the following:

(1) Substitution of transmitting equipment having equal or tighter frequency tolerance.

(2) Any decrease in antenna primary lobe beamwidth which is accompanied by a corresponding decrease in antenna input power so as to not increase the effective radiated power in excess of a 2 to 1 ratio.

(3) Any decrease in antenna height or transmitter output power.

(f) Effective August 1, 1985, when an operational-fixed station which conforms to the technical standards of this subpart (or, in the case of the 12,200-12,700 MHz band, a direct broadcast satellite station) receives or will receive interference in excess of the levels specified in this section as a result of an existing licensee's use of non-conforming equipment authorized between July 20, 1961 and July 1, 1976, and the interference would not result if the interfering station's equipment complied with the current technical standards, the licensee of the non-conforming station must take whatever steps are necessary to correct the situation up to the point of installing equipment which fully conforms to the technical standards of this subpart. In such cases, if the engineering analysis performed in accordance with § 94.15(b) demonstrates that (1) the conforming station would receive interference from a non-conforming station in excess of the levels specified in this section and (2) the interference would be eliminated if the non-conforming equipment were replaced with equipment which complies with the standards of this subpart, the licensee (or prospective licensee) of the station which would receive interference shall provide written notice of the potential interference to both the non-conforming licensee and the Commission's office in Gettysburg, PA. The non-conforming licensee shall make all required equipment changes within 180 days from the date of official Commission notice informing the licensee that it must upgrade its equipment, unless an alternative solution has been agreed to by all parties involved in the interference situation. If a non-conforming licensee fails to make all required changes within the specified period of time, the Commission may require the licensee to suspend operation until the changes are completed.

(Secs. 4, 303, 48 Stat., as amended, 1066, 1082, 1083 (47 U.S.C. 154, 303, 307); secs. 4(i), 301 and 303(r), Federal Communications Act of 1934, as amended, 47 U.S.C. 4(i), 301 and 303(r))

[40 FR 20928, May 13, 1975]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 94.63, see the List of CFR Sections Affected in the Finding Aids section of this volume.

§ 94.65 Frequencies.

Frequencies normally available for assignment in this service are set forth with applicable limitations in the following tables, except that licensees holding valid authorizations prior to August 1, 1975 which do not meet the provisions of this section may continue to be authorized indefinitely:

(a) *928-960 MHz*—(1) *Multiple Address System frequencies.* Multiple address system (MAS) frequencies are available for the point-to-multipoint transmission of a licensee's products or services, excluding video entertainment material, to a licensee's customer or for its own internal communications. The paired frequencies listed in this section shall be used for two-way interrogate/response communications between a master station and remote stations. Each master station operating on one of the paired channels is required to serve a minimum of four separate active remote stations. Ancillary one-way communications on paired frequencies are permitted on a case-by-case basis. Ancillary communications between interrelated master stations are permitted on a secondary basis. The normal bandwidth assigned will be 12.5 kHz. Upon adequate justification, however, additional contiguous channels may be authorized to provide up to a 50 kHz bandwidth. Tables 2, 4, and 6 list frequencies with 25 kHz bandwidth. When licensed for a larger bandwidth, the system still is required to use equipment which meets the ±0.00015 percent tolerance requirement. (See § 94.67(a) of this part). Systems licensed as of May 1, 1988, operating on the 25 k nels listed in these tables grandfathered May 11, 1988.

(i) *General Access Pool:* Fr listed in this paragraph are to all persons eligible under p use in multiple address radio Except as noted, however, quencies may be used by eli the Power Radio Service on frequencies in § 94.65(a)(1)(ii part are exhausted in the p geographic area. The freque also available for shared use b Public Land Mobile Service frequencies listed in § 22.501(g chapter are exhausted in the lar geographic area. Applicat use of these frequencies unde shall be subject to part 94 ments.

TABLE 1—PAIRED FREQUENCIES (M

(12.5 kHz bandwidth)

Remote transmit	Master tra
928.00625	9
928.01875	9
928.03125	9
928.04375	9
928.05625	9
928.06875	9
928.08125	9
928.09375	9
928.10625	9
928.11875	95
928.13125	95
928.14375	95
928.15625	95
928.16875	95
928.18125	95
928.19375	95
928.20625	95
928.21875	95
928.23125	95
928.24375	95
928.25625	95
928.26875	95
928.28125	95
928.29375	95
928.30625	95
928.31875	952
928.33125	952
928.34375	952

UNPAIRED FREQUNCIES (MHZ)[1]

(12.5 kHz bandwidth)

956.25625	956.33125	9
956.26875	956.34375	9
956.28125	956.35625	9
956.29375	956.36875	9
956.30625	956.38125	9

UNPAIRED FREQUENCIES (MHZ)[1]—Continued

(12.5 kHz bandwidth)

956.31875

[1] Available to power eligibles regardless of whether frequencies in the power pool are exhausted.

TABLE 2—PAIRED FREQUENCIES (MHZ)

(25 kHz bandwidth)

Remote transmit	Master transmit
928.0125	952.0125
928.0375	952.0375
928.0625	952.0625
928.0875	952.0875
928.1125	952.1125
928.1375	952.1375
928.1625	952.1625
928.1875	952.1875
928.2125	952.2125
928.2375	952.2375
928.2625	952.2625
928.2875	952.2875
928.3125	952.3125
928.3375	952.3375

UNPAIRED FREQUENCIES (MHZ)[1]

(25 kHz bandwidth)

956.2625

956.2875

956.3125

956.3375

956.3625

956.3875

956.4125

956.4375

[1] Available to power eligibles regardless of whether frequencies in the power pool are exhausted.

(ii) *Power Pool:* Frequencies listed in this paragraph are available to persons eligible under § 90.63 of this chapter for licensing in the Power Radio Service for use in multiple address radio systems. After January 1, 1992, the frequencies are also available for use by general access pool users and part 22 Public Land Mobile Service users (§ 22.501(g) of this chapter) provided frequencies listed in their respective pools are exhausted in the particular geographic area. Applications for use of these frequencies under part 22 of this chapter shall be subject to part 94 of this chapter requirements.

TABLE 3—PAIRED FREQUENCIES (MHZ)

(12.5 kHz bandwidth)

Remote transmit	Master transmit
928.35625	952.35625
928.36875	952.36875

TABLE 3—PAIRED FREQUENCIES (MHZ)—Continued

(12.5 kHz bandwidth)

Remote tranamit	Master tranamit
928.38125	952.38125
928.39375	952.39375
928.40625	952 40625
928.41875	952.41875
928.43125	952.43125
928.44375	952.44375
928.45625	952.45625
928.46875	952.46875
928.48125	952.48125
928.49375	952.49375
928.50625	952.50625
928.51875	952.51875
928.53125	952.53125
928.54375	952.54375
928.55625	952.55625
928.56875	952.56875
928.58125	952 58125
928.59375	952.59375
928.60625	952.60625
928.61875	952.61875
928.63125	952.63125
928.64375	952.64375
928.65625	952.65625
928.66875	952.66875
928.68125	952.68125
928.69375	952.69375
928.70625	952.70625
928.71875	952.71875
928.73125	952.73125
928.74375	952.74375
928.75625	952.75625
928.76875	952.76875
928.78125	952.78125
928.79375	952.79375
928.80625	952.80625
928.81875	952.81875
928.83125	952.83125
928.84375	952.84375

TABLE 4—PAIRED FREQUENCIES (MHZ)

(25 KHZ BANDWIDTH)

Remote transmit	Master transmit
928.3625	952.3625
928.3875	952.3875
928.4125	952.4125
928.4375	952.4375
928.4625	952.4625
928.4875	952.4875
928.5125	952.5125
928.5375	952.5375
928.5625	952.5625
928.5875	952.5875
928.6125	952.6125
928.6375	952.6375
928.6625	952.6625
928.6875	952.6875
928.7125	952.7125
928.7375	952.7375
928.7625	952.7625
928.7875	952.7875
928.8125	952.8125
928.8375	952.8375

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(iii) *Frequencies listed in this paragraph are available for shared use by general access pool users for multiple address operations if frequencies listed in paragraph (a)(1)(i) of this section are exhausted in the particular geographic area:* The frequencies are also available to eligibles in the power pool provided there are no other frequencies available for the type of operation contemplated. The frequencies in this pool may be assigned for paired or unpaired operation. If paired, the corresponding lower frequency shall be for remote unit use. Applications for these frequencies shall be subject to the conditions outlined in § 22.27 of this chapter.

TABLE 5—PUBLIC MOBILE SERVICE CATEGORY, FREQUENCIES (MHZ)

(12.5 KHZ BANDWIDTH)

Remote transmit	Master transmit
928.85625	959.85625
928.86875	959.86875
928.88125	959.88125
928.89375	959.89375
928.90625	959.90625
928.91875	959.91875
928.93125	959.93125
928.94375	959.94375
928.95625	959.95625
928.96875	959.96875
928.98125	959.98125
928.99375	959.99375

TABLE 6—PUBLIC MOBILE SERVICE CATEGORY, FREQUENCIES (MHZ)

(25 KHZ BANDWIDTH)

Remote transmit	Master transmit
928.8625	959.8625
928.8875	959.8875
928.9125	959.9125
928.9375	959.9375
928.9625	959.9625
928.9875	959.9875

(iv) Frequencies listed in this paragraph are shared with stations in the Public Land Mobile Service (part 22).

TABLE 7—PAIRED FREQUENCIES

[12.5 KHZ BANDWIDTH]

Remote transmit	Master transmit
932.00625	941.00625
932.01875	941.01875
932.03125	941.03125

TABLE 7—PAIRED FREQUENCIES—Continu

[12.5 KHZ BANDWIDTH]

Remote transmit	Master transmi
932.04375	941.0
932.05625	941.0
932.06875	941.0
932.08125	941.0
932.09375	941.0
932.10625	941.1
932.11875	941.1
932.13125	941.1
932.14375	941.1
932.15625	941.1
932.16875	941.1
932.18125	941.1
932.19375	941.1
932.20625	941.20
932.21875	941.21
932.23125	941.23
932.24375	941.24
932.25625	941.25
932.26875	941.26
932.28125	941.28
932.29375	941.29
932.30625	941.30
932.31875	941.31
932.33125	941.33
932.34375	941.34
932.35625	941.35
932.36875	941.36
932.38125	941.38
932.39375	941.39
932.40625	941.40
932.41875	941.41
932.43125	941.43
932.44375	941.44
932.45625	941.45
932.46875	941.46
932.48125	941.48
932.49375	941.49

(v) *Equivalent power and anten heights for multiple address mast stations:*

Antenna height (AAT) in feet	Maximum effectiv radiated powe	
	Watts	dB
Above 1,000	200	5
901-1,000	250	5
801-900	315	5
701-800	400	5
601-700	500	5
501-600	630	5
500 and below	1,000	6

For mobile operations the maximum ERP is 25 watts (44 dBm).

(2) Fixed point-to-point frequencies

(i)

TABLE 8—PAIRED FREQUENCIES

[25 kHz bandwidth]

Transmit (or receive)	Receive (or transmit)
932.5125	941.5125
932.5375	941.5375
932.5625	941.5625
932.5875	941.5875
932.6125	941.6125
932.6375	941.6375
932.6625	941.6625
934.8375	943.8375
934.8625	943.8625
934.8875	943.8875
934.9125	943.9125
934.9375	943.9375
934.9625	943.9625
934.9875	943.9875

(ii) Table 9—(50 kHz bandwidth).

Paired Frequencies

Transmit (receive) (MHz)	Receive (transmit) (MHz)
932.7000	941.7000
932.7500	941.7500
934.8000	943.8000
956.65	953.05
956.75	953.15
956.85	953.25
956.95	953.35
957.05	953.45
957.25	953.65
957.35	953.75
957.45	953.85
957.65	954.05
957.75	954.15
957.85	954.25
958.05	954.45
958.15	954.55
958.25	954.65
958.45	954.85
958.55	954.95
958.65	955.05
958.85	955.25
958.95	955.35
959.05	955.45
959.25	955.65
959.35	955.75
959.45	955.85
959.55	955.95
959.65	956.05

(iii)

TABLE 10—PAIRED FREQUENCIES

[100 kHz bandwidth]

Transmit (receive) (MHz)	Receive (transmit) (MHz)
932.8250	941.8250
932.9250	941.9250
933.0250	942.0250
934.5250	943.5250
934.6250	943.6250
934.7250	943.7250
956.6	953.0
956.7	953.1
956.8	953.2
956.9	953.3
957.0	953.4
957.1	953.5
957.2	953.6
957.3	953.7
957.4	953.8
957.5	953.9
957.6	954.0
957.7	954.1
957.8	954.2
957.9	954.3
958.0	954.4
958.1	954.5
958.2	954.6
958.3	954.7
958.4	954.8
958.5	954.9
958.6	955.0
958.7	955.1
958.8	955.2
958.9	955.3
959.0	955.4
959.1	955.5
959.2	955.6
959.3	955.7
959.4	955.8
959.5	955.9
959.6	956.0
959.7	956.1

(iv)

TABLE 11—PAIRED FREQUENCIES

[200 kHz bandwidth]

Transmit (receive) (MHz)	Receive (transmit) (MHz)
933.1750	942.1750
933.3750	942.3750
933.5750	942.5750
933.7750	942.7750
933.9750	942.9750
934.1750	943.1750
934.3750	943.3750
957.15	953.55
957.55	953.95
957.95	954.35
958.35	954.75
958.75	955.15
959.15	955.55

(b) *1850–1990 MHz.*

(1) 10 MHz maximum bandwidth.

PAIRED FREQUENCIES

Transmit (or receive)	Receive (or transmit)
1855	1935
1865	1945
1875	1955
1885	1965
1895	1975
1905	1985

UNPAIRED FREQUENCIES

	[1] 1915
	[1] 1925

[1] Available for systems employing one-way transmission.

(2) 5 MHz maximum bandwidth.

PAIRED FREQUENCIES

Transmit (or receive)	Receive (or transmit)
1860	
1870	1940
1880	1950
1890	1960
1900	1970
	1980

(c) *2130–2150 MHz; 2180–2200 MHz.* 800 kHz maximum bandwidth, unless noted.

PAIRED FREQUENCIES

2130-2150 MHz Transmit (or receive)	2180-2200 MHz Receive (or transmit)
2130.8	2180.8
2131.6	[1] 2181.6
2132.4	2182.4
2133.2	[1] 2183.2
2134.0	2184.0
2134.8	[1] 2184.8
2135.6	2185.6
2136.4	[1] 2186.4
2137.2	2187.2
2138.0	[1] 2188.0
2138.8	2188.8
2139.6	[1] 2189.6
2140.4	2190.4
2141.2	[1] 2191.2
2142.0	2192.0
2142.8	[1] 2192.8
2143.6	2193.6
2144.4	[1] 2194.4
2145.2	2195.2
2146.0	[1] 2196.0
2146.8	2196.8
2147.6	[1] 2197.6
2148.4	2198.4
2149.2	2199.2

[1] Consideration will be given on a case-by-case basis to assigning these frequency pairs to systems employing 160 kHz bandwidth transmissions.

(d) *2150–2160 MHz:* Specific frequency of operation to be set forth in authorization. Omnidirectional transmission only may be authorized, subject to providing protection from harmful interference to previously authorized stations in this service and in other services sharing this band.

(e) *2450–2500 MHz:*

(1) This band is shared with other communications services and is not subject to protection from interference from industrial, scientific, and medical devices operating on 2450 MHz.

(2) Stations licensed in this band under this part prior to (effective date of rules) are grandfathered and may continue their authorized operations. Stations licensed in the 2483.5-2500 MHz portion of the band as of July 25, 1985, or on a subsequent date as a result of submitting an application on or before July 25, 1985, are grandfathered, and may continue operations, subject only to license renewal, on a co-primary basis with the Radiodetermination Satellite Service.

(3) 625 KHz bandwidth channels. The normal bandwidth authorized will be 625 KHz. Upon adequate justification, additional contiguous channels may be authorized to provide up to a 2500 kHz bandwidth.

PAIRED FREQUENCIES (MHZ)

Transmit (or receive)	Receive (or transmit)
2450.3125	2467.5625
2450.9375	2468.1875
2451.5625	2468.8125
2452.1875	2469.4375
2452.8125	2470.0625
2453.4375	2470.6875
2454.0625	2471.3125
2454.6875	2471.9375
2455.3125	2472.5625
2455.9375	2473.1875
2456.5625	2473.8125
2457.1875	2474.4375
2457.8125	2475.0625
2458.4375	2475.6875
2459.0625	2476.3125
2459.6875	2476.9375
2460.3125	2477.5625
2460.9375	2478.1875
2461.5625	2478.8125
2462.1875	2479.4375
2462.8125	2480.0625

PAIRED FREQUENCIES (MHz)—Continued

Transmit (or receive)	Receive (or transmit)
2463.4375	2480.6875
2464.0625	2481.3125
2464.6875	2481.9375
2465.3125	2482.5625
2465.9375	2483.1875

The 2466.25-2467.25 MHz portion of this band is an unchanneled band between paired transmit and receive frequencies. Use of frequencies in this band with up to 1 MHz authorized bandwidth will be considered on a case-by-case basis and will be subject to the technical standards for the 2450-2500 MHz band as outlined in this part. Authorization will be made on a secondary basis only.

(f) *2500-2690 MHz:* Operational-ixed stations may be authorized to perate in this band on the specific hannels indicated below:

FREQUENCIES (MHz)

650-2656 [1]
662-2668 [1]
674-2680 [1]
686.9375 [1 2]
687.9375 [1 2]
688.9375 [1 2]

uch assignments are subject to the ondition that all stations licensed on ese channels must comply with the chnical standards set forth in 94.65. Operational-fixed stations au- orized in this band as of July 16, 971, which do not comply with the ove provisions may continue to oper- e on the frequencies assigned on a equal basis with other stations oper- ing in accordance with the Table of equency allocations. Requests for bsequent license renewals or modifi- tions for such stations will be con- dered. However, expansion of sys- ms comprised of such stations will not be permitted, except on frequencies allocated under this part.

(g) *6525-6875 MHz.*

(1) 800 kHz maximum authorized bandwidth channels.

Transmit (or receive) (MHz):	*Receive (or transmit) (MHz)*
6525.5	6870.5
6526.3	6871.3
6527.1	6872.1
6527.9	6872.9
6528.7	6873.7
6529.5	6873.7

(2) 1,600 kHz maximum authorized bandwidth channels.

Transmit (or receive) (MHz):	*Receive (or transmit) (MHz)*
6525.9	6870.9
6527.5	6872.5
6529.1	6874.1

(3) 5 MHz maximum bandwidth.

PAIRED FREQUENCIES

Transmit (or receive)	Receive (or transmit)
6550.0	6730.0
6560.0	6740.0
6590.0	6750.0
6600.0	6760.0
6610.0	6770.0
6620.0	6780.0
6630.0	6790.0
6640.0	6800.0
6650.0	6810.0
6660.0	6820.0
6670.0	6830.0
6680.0	6840.0
6690.0	6850.0
6700.0	6860.0
6710.0	[1] 6870.0

[1] Use of this frequency is authorized on a non-interference basis to broadcast operations in the band 6875-7125 MHz.

(4) 10 MHz maximum bandwidth.

PAIRED FREQUENCIES

Transmit (or receive)	Receive (or transmit)
6545 [1]	[1] 6715
6555 [1]	[1] 6725
6565	6735

Pursuant to § 94.69, stations licensed on se channels may employ any type of ission consistent with efficient use of the ctrum and good engineering practice, ept that Type B, damped-wave emission l not be authorized.

Response frequencies: When authorized, y may be paired respectively with the annels 2650-2656, 2662-2668, and 2674- 0 MHz.

PAIRED FREQUENCIES—Continued

Transmit (or receive)	Receive (or transmit)
6585	6745
6595	6755
6605	6765
6615	6775
6625	6785
6635	6795
6645	6805
6655	6815
6665	6825
6675	6835
6685	6845
6695	6855
6705	6865
6535[2]	[2]6575

[1] These frequencies may be assigned for unpaired use.

[2] Available only for emergency restoration, maintenance bypass, or other temporary-fixed purposes. Such uses are authorized on a non-interference basis to other frequencies in this band. Interference analysis required by § 94.63(a) does not apply to this frequency pair.

UNPAIRED FREQUENCIES

6720[1]

[1] This frequency may be assigned for unpaired use.

(h) *12,200-12,700 MHz:* The Commission has allocated the 12.2-12.7 GHz band for use by the broadcasting-satellite service. Operational-fixed stations authorized after September 9, 1983 shall be licensed on a noninterference basis and shall be required to make any and all adjustments necessary to prevent interference to operating domestic broadcasting-satellite systems. (Section 94.93 contains special provisions for stations authorized in the band on or before September 9, 1983). Notwithstanding any other provisions, no operational-fixed stations shall be permitted to cause interference to broadcasting-satellite stations of other countries operating in accordance with the Region 2 plan for the broadcasting-satellite service established at the 1983 RARC.

(i) 10,550-10,680 MHz. (1) The following frequencies are available for point-to-multipoint digital terminations systems:

Channel No.	Nodal station	User station
	Frequency band limits (MHz)	Frequency band limits (MHz)
4A	10,580.0–10,582.5	10,645.0–10,647.5
4B	10,582.5–10,585.0	10,647.5–10,650.0
19	10,585.0–10,587.5	10,650.0–10,652.5
20	10,587.5–10,590.0	10,652.5–10,655.0
21	10,590.0–10,592.5	10,655.0–10,675.5
22	10,592.5–10,595.0	10,657.5–10,660.0
23	10,595.0–10,597.5	10,660.0–10,662.5
24	10,597.5–10,600.0	10,662.5–10,665.0
7	10,605.0–10,607.5	10,670.0–10,672.5
9	10,610.0–10,612.5	10,675.0–10,677.5

(i) Each station will be limited to one frequency pair per SMSA. An additional channel pair may be assigned upon a showing that the service to be provided will fully utilize the spectrum requested. The channel pair may be subdivided as desired by the licensee.

(ii) A frequency pair may be assigned to more than one licensee in the same SMSA or service area as long as the interference protection criteria of § 94.63 are met.

(2) The following frequencies are available for point-to-point operations:

(i) 2.5 MHz bandwidth.

Transmit (receive) MHz	Receive (transmit) MHz
10,551.25	10,616.25
	10,553.75
	10,618.75
10,556.25	10,621.25
	10,558.75
	10,623.75

(ii) 1.25 MHz bandwidth.

Transmit (receive) MHz	Receive (transmit) MHz
10,560.625	10,625.625
	10,561.875
	10,626.875
10,563.125	10,628.125
	10,564.375
	10,629.375

(j) 17700-19700 MHz

NOTE.—Stations authorized as of September 9, 1983 to use frequencies in this band may, upon proper application, continue to be authorized for such operations.

(1) 2 MHz maximum authorized bandwidth channels:

Transmit (receive) (MHz)	Receive (transmit) (MHz)
141.0	n/a

(2) 5 MHz maximum authorized ndwidth channels:

Transmit (receive) (MHz)	Receive (transmit) (MHz)
340 MHz Separation	
62.5	19102.5
67.5	19107.5
72.5	19112.5
77.5	19117.5
82.5	19122.5
87.5	19127.5
92.5	19132.5
97.5	19137.5
02.5	19142.5
07.5	19147.5
12.5	19152.5
17.5	19157.5

3) 6 MHz maximum authorized ndwidth channels:

Transmit (receive) (MHz)	Receive (transmit) (MHz)
216 MHz Separation	
45.0	n/a
51.0	18367.0
57.0	18373.0
63.0	18379.0
69.0	18385.0
75.0	18391.0
81.0	18397.0
87.0	18403.0
93.0	18409.0
99.0	18415.0
05.0	18421.0
11.0	18427.0
17.0	18433.0
23.0	18439.0
29.0	18445.0
35.0	18451.0
41.0	18457.0
47.0	18463.0
53.0	18469.0
59.0	18475.0
65.0	18481.0
71.0	18487.0
77.0	18493.0
83.0	18499.0
89.0	13505.0
95.0	18511.0
01.0	18517.0
07.0	18523.0
13.0	18529.0
19.0	18535.0
25.0	18541.0
31.0	18547.0
37.0	18553.0

Transmit (receive) (MHz)	Receive (transmit) (MHz)
18343.0	18559.0
18349.0	18565.0
18355.0	18571.0
18361.0	18577.0

(4) 10 MHz maximum authorized bandwidth channels:

Transmit (receive) (MHz)	Receive (transmit) (MHz)
1560 MHz Separation	
17705.0	19265.0
17715.0	19275.0
17725.0	19285.0
17735.0	19295.0
17745.0	19305.0
17755.0	19315.0
17765.0	19325.0
17775.0	19335.0
17785.0	19345.0
17795.0	19355.0
17805.0	19365.0
17815.0	19375.0
17825.0	19385.0
17835.0	19395.0
17845.0	19405.0
17855.0	19415.0
17865.0	19425.0
17875.0	19435.0
17885.0	19445.0
17895.0	19455.0
17905.0	19465.0
17915.0	19475.0
17925.0	19485.0
17935.0	19495.0
17945.0	19505.0
17955.0	19515.0
17965.0	19525.0
17975.0	19535.0
17985.0	19545.0
17995.0	19555.0
18005.0	18565.0
18015.0	19575.0
18025.0	19585.0
18035.0	19595.0
18045.0	19605.0
18055.0	19615.0
18065.0	19625.0
18075.0	19635.0
18085.0	19645.0
18095.0	19655.0
18105.0	19665.0
18115.0	19675.0
18125.0	19685.0
18135.0	19695.0
340 MHz Separation	
18585.0	18925.0
18595.0	18935.0
18605.0	18945.0
18615.0	18955.0
18625.0	18965.0
18635.0	18975.0
18645.0	18985.0

Transmit (receive) (MHz)	Receive (transmit) (MHz)
18655.0	18995.0
18665.0	19005.0
18675.0	19015.0
18685.0	19025.0
18695.0	19035.0
18705.0	19045.0
18715.0	19055.0
18725.0	19065.0
18735.0	19075.0
18745.0	19085.0
18755.0	19095.0
18765.0	19105.0
18775.0	19115.0
18785.0	19125.0
18795.0	19135.0
18805.0	19145.0
18815.0	19155.0

(5) 20 MHz maximum authorized bandwidth channels:

Transmit (receive) (MHz)	Receive (transmit) (MHz)
1560 MHz Separation	
17710.0	19270.0
17730.0	19290.0
17750.0	19310.0
17770.0	19330.0
17790.0	19350.0
17810.0	19370.0
17830.0	19390.0
17850.0	19410.0
17870.0	19430.0
17890.0	19450.0
17910.0	19470.0
17930.0	19490.0
17950.0	19510.0
17970.0	19530.0
17990.0	19550.0
18010.0	19570.0
18030.0	19590.0
18050.0	19610.0
18070.0	19630.0
18090.0	19650.0
18110.0	19670.0
18130.0	19690.0
340 MHz Separation	
18590.0	18930.0
18610.0	18950.0
18630.0	18970.0
18650.0	18990.0
18670.0	19010.0
18690.0	19030.0
18710.0	19050.0
18730.0	19070.0
18750.0	19090.0
18770.0	19110.0
18790.0	19130.0
18810.0	19150.0

(6) 40 MHz maximum authorized bandwidth channels:

Transmit (receive) (MHz)	Receive (transmit) (MHz)
1560 MHz Separation	
17720.0	19280.0
17760.0	19320.0
17800.0	19360.0
17840.0	19400.0
17880.0	19440.0
17920.0	19480.0
17960.0	19520.0
18000.0	19560.0
18040.0	19600.0
18080.0	19640.0
18120.0	19680.0

(7) 80 MHz maximum authorized bandwidth channels:

Transmit (receive) (MHz)	Receive (transmit) (MHz)
1560 MHz Separation	
17740.0	19300.0
17820.0	19380.0
17900.0	19460.0
17980.0	19540.0
18060.0	19620.0

(8) The following frequencies are available for point-to-multipoint systems:

Channel No.	Nodal station	User station
	Frequency band (MHz) limits	Frequency band (MHz) limits
25	18,820–18,830	19,160–19,170
26	18,830–18,840	19,170–19,180
27	18,840–18,850	19,180–19,190
28	18,850–18,860	19,190–19,200
29	18,860–18,870	19,200–19,210

(i) Each station will be limited to one frequency pair per SMSA. Additional channel pairs may be assigned upon a showing that the service to be provided will fully utilize the spectrum requested. A channel pair may be subdivided as desired by the licensee.

(ii) A frequency pair may be assigned to more than one licensee in the same SMSA or service area so long as the interference protection criteria of § 94.63 are met.

(k) *31.0 to 31.3 GHz.* These frequencies are shared on a coequal basis with other stations in the fixed and mobile services (see parts 21, 74, 78 and 95). No interference protection is afforded to fixed or mobile stations operating in this band.

(1) 25 MHz authorized bandwidth channels, 150 MHz separation.

Transmit (receive) (MHz)	Receive (transmit) (MHz)
31,012.5	31,162.5
31,037.5	31,187.5
31,062.5	31,212.5
31,087.5	31,237.5
31,112.5	31,262.5
31,137.5	31,287.5

(2) 50 MHz authorized bandwidth channels, 150 MHz separation.

Transmit (receive) (MHz)	Receive (transmit) (MHz)
31,025.0	31,175.0
31,075.0	31,225.0
31,125.0	31,275.0

(l) Except as provided for in § 94.91 and § 94.65(k), frequencies in bands authorized above 21.2 GHz are not paired and will be as specified in the authorization.

(m) *6425 to 6525 MHz—Mobile.* Paired and un-paired operations permitted. Use of this spectrum for direct delivery of video programs to the general public or multi-channel cable distribution is not permitted. This band is co-equally shared with mobile stations licensed pursuant to parts 21, 74 and 78 of the Commission's Rules. Stations not intended to be operated while in motion will be licensed under the provision of § 94.25(d). The following channel plans apply.

(1) 1 MHz maximum authorized bandwidth channels.

	Receive (or transmit) (MHz)
Transmit (or receive) (MHz):	
6425.5	6575.5
6450.5	6500.5

(2) 8 MHz maximum authorized bandwidth channels.

	Receive (or transmit) (MHz)
Transmit (or receive) (MHz):	
6430.0	6480.0
6438.0	6488.0
6446.0	6596.0
6455.0	6505.0
6463.0	6513.0
6471.0	6521.0

(3) 25 MHz maximum authorized bandwidth channels.

	Receive (or transmit) (MHz)
Transmit (or receive) (MHz):	
6437.5	6487.5
6462.5	6512.5

(Secs. 4, 303, 307, 48 Stat., as amended, 1066, 1082, 1083 (47 U.S.C. 154; 303, 307); secs. 4(i), 301 and 303(r), Federal Communications Act of 1934, as amended, 47 U.S.C. 4(i), 301 and 303(r))

[40 FR 20928, May 13, 1975]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 94.65, see the List of CFR Sections Affected in the Finding Aids section of this volume.

§ 94.67 Frequency tolerance.

Stations in this service shall maintain the carrier frequency of each authorized transmitter to within the following percentage of the assigned frequency:

Frequency band (MHz)	Tolerance as percentage of assigned frequency
928–929	[8]0.0005
932–932.5, 941–941.5	0.00015
932.5–935, 941.5–944	0.00025
952–960	(1)(8)
1,850 to 1,990	0.002
2,130 to 2,150	0.001
2,150 to 2,160	0.001
2,180 to 2,200	0.001
2,450 to 2,500	0.001
2,500 to 2,690	(2)
6,425 to 6,525	0.005
6,525 to 6,875	0.005
10,550 to 10,680	[6] 0.0003
12,200 to 13,150	[5] 0.005
13,200 to 13,250	0.03
17,700 to 18,820	[7] 0.003

Frequency band (MHz)	Tolerance as percentage of assigned frequency
18,820 to 18,920	0.001
18,920 to 19,700	[7] 0.003
21,200 to 23,600	[8] 0.03
31,000 to 31,300	0.03
31,300 to 40,000	0.03

[1] Transmitters authorized prior to January 1, 1981 at remote sites as part of a central protection alarm system are permitted a tolerance of .002%. Such stations may continue to operate as licensed until January 1, 1991.

[2] In accordance with the technical standards contained in § 94.95 when A5 emission is to be employed. Otherwise, the frequency tolerance shall be 0.0025%.

[3] For exceptions see § 94.90.

[4] To be specified in authorization.

[5] For point-to-point systems, with a channel greater than or equal to 50 kHz bandwidth, .0005; for multiple address master stations, regardless of bandwidth, .00015; for multiple address remote stations with 12.5 kHz bandwidths, .00015; for multiple address remote stations with channels greater than 12.5 kHz bandwidth, .0005.

[6] For exceptions see § 94.91.

[7] Existing type accepted equipment with a frequency tolerance of ±0.03% may be marketed until December 1, 1988. Equipment installed and operated prior to December 1, 1988 may continue to operate after that date with a minimum frequency tolerance of ±0.03%. However, the replacement of equipment requires that the ±0.003% tolerance be met.

[8] Digital Termination System transmitters must maintain frequency tolerances in accord with § 94.191 in this band.

[9] For remote stations with 12.5 kHz bandwidth, the tolerance is ±.00015.

(Secs. 4, 303, 307, 48 Stat., as amended, 1066, 1082, 1083 (47 U.S.C. 154, 303, 307); secs. 4(i), 301 and 303(r), Federal Communications Act of 1934, as amended, 47 U.S.C. 4(i), 301 and 303(r))

[40 FR 53397, Nov. 18, 1975]

Editorial Note: For Federal Register citations affecting § 94.67 see the List of CFR Sections Affected in the Finding Aids section of this volume.

§ 94.69 Types of emission.

Stations in this service will be authorized any type of emission, method of modulation, and transmission characteristic, consistent with efficient use of the spectrum and good engineering practice, except that Type B, damped-wave emission will not be authorized.

[48 FR 32586, July 18, 1983]

§ 94.71 Emission and bandwidth limitations.

(a) Each authorization issued to a station operating in this service will show, as a prefix to the emission classification, a figure specifying the necessary bandwidth.

(b) The maximum bandwidth which will be authorized per frequency assigned is set out in the table which follows. Regardless of the maximum authorized bandwidth specified for each frequency band, the Commission reserves the right to issue a license for less than the maximum bandwidth if it appears that a lesser bandwidth would be sufficient to support an applicant's intended communications.

Frequency band MHz	Maximum authorized bandwidth
928–929	12.5, 25 kHz [1] [7]
932–932.5, 941–941.5	12.5 kHz [1]
932.5–935, 941.5–944	25, 50, 100, 200 kHz [1]
952–960	12.5, 25, 50, 100, 200 kHz [1] [6]
1850–1990 MHz	5 or 10 MHz [1]
2130–2150 MHz	800 or 1600 kHz [1]
2150–2160 MHz	10 MHz
2180–2200 MHz	800 or 1600 kHz [1]
2450–2483.5	625 kHz [2]
2483.5–2500	800 kHz
2650–2690 MHz	6 MHz [3]
2686.9375–2688.9375 MHz	125 kHz [3]
6425–6525	25
6525–6875 MHz	5 or 10 MHz [1]
10,550–10,680	5
12,200 to 12,700	10 or 20 [1]
13,200 to 13,250	25
17,700 to 18,140	80
18,140 to 18,142	2
18,142 to 18,580	6
18,580 to 18,820	20
18,820 to 18,920	10
18,920 to 19,160	20
19,160 to 19,260	10
19,260 to 19,700	80
21,200–23,600 MHz	up to 100 MHz [5]
31,000 to 31,300	25 or 50 MHz
38,600–40,000 MHz	up to 50 MHz
Bands above 40,000 MHz [4]	

[1] The maximum bandwidth that will be authorized for each particular frequency in this band is detailed in the appropriate frequency table in § 94.65.

[2] 1250 kHz, 1875 kHz, or 2500 kHz on a case-by-case basis.

[3] Assignments for applications proposing to employ amplitude modulation (A5) for the transmission of a video signal will be made in accordance with § 94.95. For applications not proposing to employ a video signal, the standards contained in paragraph (c) of this section, shall apply.

[4] To be specified in authorization.

[5] For exceptions see § 94.91.

[6] A 12.5 bandwidth applies only to frequencies listed in § 94.65(a)(1).

[7] For frequencies listed in § 94.65(a)(1), consideration will be given on a case-by-case basis to authorizing bandwidths up to 50 kHz.

(c) The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the following schedule:

(1) When using transmissions other than those employing digital modulation techniques:

(i) On any frequency removed from the assigned frequency by more than 50 percent up to and including 100 percent of the authorized bandwidth, at least 25 decibels;

(ii) On any frequency removed from the assigned frequency by more than 100 percent up to and including 250 percent of the authorized bandwidth, at least 35 decibels;

(iii) On any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth at least 43 plus 10 $\log_{10}$ (mean output power in watts) decibels or 80 decibels, whichever is the lesser attenuation.

(iv) On any frequency above 40,000 MHz the carrier harmonics of any systems operating under the provisions of § 94.91 shall be attenuated at least 33 plus 10 log 10 (mean output power in watts) decibels.

(2) When using transmissions employing digital modulation techniques:

(i) Except as noted in paragraph (c)(3) of this section, for operating frequencies below 15 GHz, in any 4 kHz band, the center frequency of which is removed from the assigned frequency by more than 50 percent up to and including 250 percent of the authorized bandwidth: As specified by the following equation but in no event less than 50 decibels: $A=35+0.8(P-50)+10 \log_{10}B$. (Attenuation greater than 80 decibels is not required.)

Where:

A=attenuation (in decibels) below the mean output power level

P=percent removed from the carrier frequency

B=authorized bandwidth in MHz.

(ii) For operating frequencies above 5 GHz, in any 1 MHz band, the center requency of which is removed from he assigned frequency by more than 0 percent up to and including 250 perent of the authorized bandwidth: As pecified by the following equation ut in no event less than 11 decibels: $=11+0.4(P-50)+10 \log_{10}B$. (Attenuion greater than 56 decibels is not quired.)

(iii) In any 4 kHz band, the center equency of which is removed from e assigned frequency by more than 0 percent of the authorized banddth: At least 43 plus 10 $\log_{10}$(mean tput power in watts) decibels, or 80 cibels, whichever is the lesser atnuation.

(iv) On any frequency above 40,000 MHz the carrier harmonics of any systems operating under the provisions of § 94.91 shall be attenuated at least 33 plus 10 log 10 (mean output power in watts) decibels.

(3) When using transmissions employing digital modulation techniques on the 900 MHz multiple address frequencies with a 12.5 kHz bandwidth, the power of any emission shall be attenuated below the unmodulated carrier power of the transmitter (P) in accordance with the following schedule:

(i) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (fd in kHz) of more than 2.5 kHz up to and including 6.25 kHz: At least 53 $\log_{10}(f_d/2.5)$ decibels;

(ii) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 6.25 kHz up to and including 9.5 kHz: At least 103 $\log_{10}(f_d/3.9)$ decibels;

(iii) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 9.5 kHz up to and including 15 kHz: At least 157 $\log_{10}(f_d/5.3)$ decibels;

(iv) On any frequency removed from the center of the authorized bandwidth by a displacement frequency greater than 15 kHz: At least 50 plus 10 $\log_{10}(P)$ or 70 decibels, whichever is the lesser attenuation.

(4) When using transmissions employing digital modulation techniques on the 900 MHz multiple address frequencies with a bandwidth greater than 12.5 kHz, the power of any emission shall be attenuated below the unmodulated carrier power of the transmitter (P) in accordance with the following schedule;

(i) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 5 kHz up to and including 10 kHz: At least 83 $\log_{10}(f_d/5)$ decibels;

(ii) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 10 kHz up to and including 250 percent of the authorized bandwidth: At least 116 $\log_{10}(f_d/$

6.1) decibels or 50 plus $10\log_{10}(P)$ or 70 decibels, whichever is the lesser attenuation;

(iii) On any frequency removed from the center of the authorized bandwidth by more than 250 percent of the authorized bandwidth: At least 43 plus 10 $\log_{10}$(output power in watts) decibels or 80 decibels, whichever is the lesser attenuation.

(5) For Digital Transmission System channels operating in the 10,550-10,680 MHz band:

(i) In any 4 kHz band, the center frequency of which is removed from the edge of the Digital Termination System (DTS) channel by to up and including 1.125 the DTS subchannel bandwidth: as specified by the following equation but in no event be less than $50+10\log_{10} N$ decibels.

$A=50+0.0333\,(F-0.5B)+10\log_{10} N$ decibels

Where:

A = Attenuation (in decibels) below mean output power level contained within the DTS channel for a given polarization.
B = Bandwidth of DTS channel (in kHz).
F = Absolute value of the difference between the center frequency of the 4 kHz band measured and the center frequency of the DTS channel (in kHz).
N = Number of active subchannels of the given polarization within the DTS channel.

(ii) In any 4 kHz band within the authorized DTS band, the center frequency of which is removed from the center frequency of the channel by more than the sum of 50% of the DTS channel bandwidth plus 1.125 times the subchannel bandwidth: as specified by the following equation but in no event less than 80 decibels.

$A=80+10\log_{10} N$ decibels

(iii) In any 4 kHz band the center frequency of which is outside the authorized DTS band:

At least $43+10\log_{10}$ (mean output power in watts) decibels.

(6) For Digital Termination System channels operating in the 17,000-19,700 MHz band:

(i) In any 4 kHz band, the center frequency of which is removed from the frequency of the center of the DTS channel by more than 50 percent of the DTS channel bandwidth up to and
including 50 percent plus 500 k
specified by the following eq
but in no event be less than
$\log_{10}$ N decibels.

$A=50+0.06\,(F-0.5B)+10\log_{10} N$ deci

Where:

A = Attenuation (in decibels) below
power level contained within th
channel for a given polarization.
B = Bandwidth of DTS channel (in kH
F = Absolute value of the difference be
the center frequency of the 4 kH
measured and the center freque
the DTS channel (in kHz).
N = Number of active subchannels
given polarization within the DTS
nel.

(ii) In any 4 kHz band within th
thorized DTS band, the center
quency of which is removed fro
center frequency of the DTS cha
by more than 50% of the ch
bandwidth plus 500 kHz: as spec
by the following equation but
event less than 80 decibels:

$A=80+10\log_{10} N$ decibels

(iii) In any 4 kHz band the ce
frequency of which is outside th
thorized DTS band:

At least $43+10\log_{10}$ (mean output pow
Watts) decibels.

(d) When a spurious emission re
and causes harmful interference,
Commission may require appropr
technical changes in equipment to
leviate the interference.

(e) The emission of an unmodula
carrier is prohibited except for
purposes as required for proper
tion and system maintenance.

(Secs. 4, 303, 48 Stat., as amended, 1
1082, 1083 (47 U.S.C. 154; 303, 307); secs.
301 and 303(r), Federal Communications
of 1934, as amended, 47 U.S.C. 4(i), 301
303(r))

[40 FR 20928, May 13, 1975]

EDITORIAL NOTE: For FEDERAL REGIST
tations affecting § 94.71, see the List of C
Sections Affected in the Finding Aids
tion of this volume.

§ 94.73 Power limitations.

(a) On any authorized frequenc
the average power delivered to an a
tenna in this service shall be the min
mum amount of power necessary

carry out the communications desired. Application of this principle shall include, but not limited to requiring a licensee who replaces one or more of his antennas with larger antennas to reduce his antenna input power by an amount appropriate to compensate for the increased primary lobe gain of the replacement antenna(s). In no event shall the average equivalent isotropically radiated power (EIRP) as referenced to an isotropic radiator, exceed the values specified below. Further, the output power of a transmitter on any authorized frequency in this service shall not exceed the following:

Frequency band (MHz)	Maximum allowable transmitter power		Maximum allowable EIRP [2]	
	Fixed (W)	Mobile (W)	Fixed (dBW)	Mobile (dBW)
928 to 929	5.0		+17	
932-932.5			+17	
932.5-935	20.0		+40	
941-941.5			+30	
941.5-944	20.0		+40	
952 to 960	[1, 3] 20.0		[3] +40	
1,850 to 1,990	20.0		+45	
2,130 to 2,150	20.0		+45	
2,150 to 2,160	20.0		[3] +45	
2,180 to 2,200	20.0		+45	
2,450 to 2,500	20.0		+45	
2,500 to 2,686	10.0		[4] +45	
2,686 to 2,690	0.25		[4] +45	
6,425 to 6,525		20.0		+35
6,525 to 6,875	20.0		+50	
10,550 to 10,565	10.0		+40	
10,565 to 10,615	(6)			
10,615 to 10,630	10.0		+40	
10,630 to 10,680	(6)			
12,200 to 12,700 [5]	10.0		[4] +50	
12,700 to 13,250	10.0		+50	
17,700 to 18,600	10.0		+55	
18,600 to 18,800	[7] 10.0		+35	
18,800 to 19,700	10.0		+55	
21,200 to 23,600 [5]	10.0		+40	
31,000 to 31,300	0.05	0.05		
38,600 to 40,000	10.0		+40	

[1] For multiple address operations see § 94.65(a)(1)(iv).

[2] Peak envelope power shall not exceed five times the average power.

[3] For multiple address operations see § 94.65(a)(1)(iv). When an omnidirectional transmitting antenna is authorized in the 2150-2160 MHz band, the maximum power shall be 60dBm.

[4] Also see § 94.77.

[5] For low power operations see §§ 94.90 and 94.91.

[6] The output power of a Digital Termination System nodal transmitter shall not exceed 0.5 watts per 250 kHz. The output power of a Digital Termination System user transmitter shall not exceed 0.04 watts per 250 kHz. The transmitter power in terms of the watts specified is the peak envelope power of the emission measured at the associated antenna input port. The operating power shall not exceed the authorized power by more than 10 percent of the authorized power in watts at any time.

[7] Maximum power delivered to antenna shall not exceed −3 dBW.

[8] Remote alarm units that are part of a multiple address central station protection system are authorized a maximum of 2 watts.

(Secs. 4, 303, 48 Stat., as amended, 1066, 1082, 1083 (47 U.S.C. 154; 303, 307); secs. 4(i), 301 and 303(r), Federal Communications Act of 1934, as amended, 47 U.S.C. 4(i), 301 and 303(r))

[40 FR 53397, Nov. 18, 1975, as amended at 45 FR 55733, Aug. 21, 1980; 46 FR 9955, Jan. 30, 1981; 48 FR 50335, Nov. 1, 1983; 49 FR 37781, Sept. 26, 1984; 50 FR 7344, Feb. 22, 1985; 50 FR 10233, Mar. 14, 1985; 52 FR 7146, Mar. 9, 1987; 53 FR 21454, June 8, 1988; 54 FR 10330, Mar. 13, 1989; 55 FR 9730, Mar. 15, 1990; 55 FR 10464, Mar. 21, 1990]

§ 94.75 Antenna limitations.

(a) Except where omnidirectional operation is specifically provided for under this part, each station in this service shall employ directional antennas with the center of the major lobe of radiation directed toward the receiving station with which it communicates or, if the path employs a passive repeater, to the center of that reflector.

(b) Directional antennas shall meet the performance standards (fo
polarization) indicated in the following table:

ANTENNA STANDARDS

Frequency (MHz)	Category	Maximum beamwidth to 3 dB points (Included angle in degrees)	Minimum antenna gain (dBi)	Minimum radiation suppression t degrees from centerline of mai decibels				
				5° to 10°	10° to 15°	15° to 20°	20° to 30°	30° to 100°
932.5 to 935 941.5 to 944	A	14.0	NA	....	6	11	14	17
	B	20.0	NA	....	....	6	10	13
952 to 960 [1] [4]	A	14.0	NA	....	6	11	14	17
	B	20.0	NA	....	....	6	10	13
1,850 to 2,690 [2]	A	5.0	NA	12	18	22	25	29
	B	8.0	NA	5	18	20	20	25
6,525 to 6,875	A	1.5	NA	26	29	32	34	38
	B	2.0	NA	21	25	29	32	35
10,550 to 10,565 [9]	A	3.4	34.0	20	24	28	32	35
	B	3.4	34.0	20	24	28	32	35
10,565 to 10,615 [3]	NA	360	NA	NA	NA	NA	NA	NA
10,615 to 10,630	A	3.4	34.0	20	24	28	32	35
	B	3.4	34.0	20	24	28	32	35
10,630 to 10,680 [3]	NA	NA	34.0	20	24	28	32	35
12,200 to 13,250 [6]	A	1.0	NA	23	28	35	39	41
	B	2.0	NA	20	25	28	30	32
17,700 to 19,700 [3]	A	NA	38.0	25	29	33	36	42
	B	NA	38.0	20	24	28	32	35
21,200 to 23,600 [5]	A	NA	38.0	25	29	33	36	42
	B	NA	38.0	20	24	28	32	35
31,000 to 31,300 [7] [8]	NA	4.0	38.0	NA	NA	NA	NA	NA
27,500 to 29,500	A	NA	38.0	25	29	33	36	42
	B	NA	38.0	20	24	28	32	35
38,600 to 40,000	A	NA	38.0	25	29	33	36	42
	B	NA	38.0	20	24	28	32	35

[1] Except for frequencies listed in § 94.65(a)(1), where omnidirectional antennas may be used.

[2] Except for 2150 MHz–2160 MHz, where the maximum beamwidth is 360 degrees and except for frequencies
MHz–2690 MHz band, where standards contained in § 94.95 apply.

[3] Except as provided for in paragraph (h) of this section.

[4] Antennas used at outlying stations as part of a central protection alarm system need conform to only the
standards: (1) The minimum on-beam forward gain must be at least 10 dBi, and (2) the minimum front-to-back ratio
least 20 dB.

[5] Except as provided in § 94.91.

[6] Except for temporary-fixed operations in the band 13200 MHz–13250 MHz with output powers less than 250
provided in § 94.90.

[7] The minimum front-to-back ratio shall be 38 dBi.

[8] Mobile, except aeronautical mobile, stations need not comply with these standards.

[9] Except for such antennas between 140° and 180° authorized or pending on January 1, 1989 for which minimu
suppression to angle (in degrees) from centerline of main beam is 36 decibels.

NOTE: Stations in this service must employ an antenna that meets the performance standards for Category A, except that, in areas not subject to frequency congestion antennas meeting standards for Category B may be employed. Note, however, that the Commission may require the use of a high performance antenna where interference problems can be resolved by the use of such antennas.

(c) Applicants shall request, and authorization for stations in this service will specify, the polarization of each transmitted signal. When periscope antenna systems or passive repeaters are employed, the applicant shall indicate the expected polarization of the reflected signal. The polarization
should be expressed as either h
tal, vertical, or at an angle fron
cal. Antenna polarizations of h
tal and vertical should be deno
the abbreviations (H) and (V),
tively. For antennas using linear
izations other than horizontal o
cal, the polarization should be
in degrees measured from the v
with angles between 0° and +
noting the on-coming electric
vector displacement in a counte
wise direction, and angles betw
and −90° denoting the on comin
tric field vector displacement
clockwise direction. In the event
ization diversity is authorized, th

polarizations must be separated by 90°. Antennas employing other than linearly polarized feed systems will not be authorized except for stations utilizing frequencies listed in § 94.65(a)(1) or under the provisions of § 94.91(i).

(d) New periscope antenna systems will be authorized upon a certification that the radiation, in a horizontal plane, from an illuminating antenna and reflector combination meets or exceeds the antenna standards of this section and, at locations where multiple periscope antennas are employed, that the cross-coupling between periscope antennas is suppressed by an amount equal to or greater than the radiation suppression specified in the standards for angles from the main beam of 140-180° for the particular band and antenna category selected. In no event will periscope antennas be authorized in frequency bands shared with common carriers.

(e) The provisions of paragraphs (a) and (c) of this section shall also apply to passive repeaters employed to redirect or repeat the signal from a station's directional antenna system.

(f) Periscope antennas used at an electric power facility plant area will be excluded from the requirements of paragraphs (b) and (d) of this section on a case-by-case basis where technical considerations preclude the use of other types of antenna systems.

(g) For frequencies listed in § 94.65(a)(1), the maximum beamwidth may be 360 degrees. The provisions of paragraph (b) of this section shall not apply to stations licensed on these frequencies where omnidirectional antennas are used.

(h) Antenna standards for point-to-multipoint channels in the 10.6 GHz and 18 GHz bands excluding operations under § 94.88.

(1) Nodal transmitting antennas may be omnidirectional or directional, consistent with coverage and interference requirements.

(2) The use of horizontal or vertical plane wave polarization, or right hand or left hand rotating elliptical polarization must be used to minimize harmful interference between stations.

(3) Directive antennas shall be used at all user stations and shall be elevated no higher than necessary to assure adequate service. The user station antennas shall meet the performance standards as specified in § 21.208(c) of this chapter and have a minimum power gain of 34 dBi in the 10,550-10,680 MHz band and 38 dBi in the 17,700-19,700 MHz band. User antenna heights shall not exceed the height criteria of part 17 of this chapter, unless authorization for use of a specific maximum antenna height (above ground and above sea level) for each location has been obtained from the Commission prior to the erection of the antenna. Requests for such authorization shall show the inclusive dates of the proposed operation. (See part 17 of this chapter concerning the construction, marking and lighting of antenna structures).

(Secs. 4, 303, 48 Stat., as amended, 1066, 1082, 1083 (47 U.S.C. 154; 303, 307))

[40 FR 20928, May 13, 1975, as amended at 40 FR 53397, Nov. 18, 1975; 45 FR 55734, Aug. 21, 1980; 46 FR 9955, Jan. 30, 1981; 50 FR 7344, Feb. 22, 1985; 50 FR 11866, Mar. 26, 1985; 50 FR 26763, June 28, 1985; 51 FR 19841, June 3, 1986; 54 FR 1942, Jan. 18, 1989; 54 FR 10331, Mar. 13, 1989; 55 FR 9730, Mar. 15, 1990]

§ 94.77 Interference to geostationary-satellites.

These limitations are necessary to minimize the probability of harmful interference to reception in the bands 2655-2690 MHz, 6425-6875 MHz, and 12.7-12.75 GHz on board geostationary-space stations in the fixed-satellite service (part 25). Stations authorized prior to July 1, 1976 in the band 2655-2690 MHz, which exceed the power levels in paragraphs (a) and (b) of this section are permitted to operate indefinitely, provided that the operations of such stations does not result in harmful interference to reception in these band on board geostationary space stations.

(a) *2655 to 2690 MHz and 6425 to 6875 MHz.* No directional transmitting antenna utilized by a fixed station operating in these bands shall be aimed within 2 degrees of the geostationary-satellite orbit, taking into account atmospheric refraction. However, exception may be made in unusual circumstances upon a showing that there is no reasonable alternative to the transmission path proposed. If there is no evidence that such exception would cause possible harmful interference to an authorized satellite system, said transmission path may be authorized on waiver basis where the maximum value of the equivalent isotropically radiated power (EIRP) does not exceed:

(1) +47 dBW for any antenna beam directed within 0.5 degrees of the stationary satellite orbit or (2) +47 to +55 dBW, on a linear decibel scale (8 dB per degree) for any antenna beam directed between 0.5 degrees and 1.5 degrees of the stationary orbit.

(b) *12.7 to 12.75 GHz.* No directional transmitting antenna utilized by a fixed station operating in this band shall be aimed within 1.5 degrees of the geostationary-satellite orbit, taking into account atmospheric refraction. However, exception may be made in unusual circumstances upon a showing that there is no reasonable alternative to the transmission path proposed. If there is no evidence that such exception would cause possible harmful interference to an authorized satellite system, said transmission path may be authorized on waiver basis where the maximum value of the equivalent isotropically radiated power (EIRP) does not exceed +45 dBW for any antenna beam directed within 1.5 degrees of the stationary satellite orbit.

(c) Methods for calculating the azimuths to be avoided may be found in: CCIR Report No. 393 (Green Books), New Delhi, 1970; in "Radio-Relay Antenna Pointing for controlled Interference With Geostationary-Satellites" by C. W. Lundgren and A. S. May, *Bell System Technical Journal,* Vol. 48, No. 10, pp. 3387-3422, December 1969; and in "Geostationary Orbit Avoidance Computer Program" by Richard G. Gould, Common Carrier Bureau Report CC-7201, FCC, Washington, DC, 1972. This latter report is available through the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22151, in printed form (PB-211 500) or source card deck (PB-211 501).

[52 FR 7147, Mar. 9, 1987]

§ 94.79 Minimum path lengths for links.

(a) The distance between end p
of a fixed link must equal or ex
the value set forth in the table b
or the EIRP must be reduced ir
cordance with the equation set f
below.

	Mini pa len (k
Frequency band (MHz):	
Below 1,850	
1,850 to 2,110	
6,425 to 7,125	
12,200 to 13,250	
Above 17,700	

(b) For paths shorter than th
specified in the Table, the EIRP s
not exceed the value derived from
following equation.

$\text{EIRP}=30-20\log[A/B]$, dBW

Where:

EIRP=equivalent isotropic radiated po in dBW.
A=Minimum path length from the T for the frequency band in kilometers.
B=The actual path length in kilometers.

(c) Upon an appropriate techni
showing, applicants and licens
unable to meet the minimum pa
length requirement may be granted
exception to these requirements.

[NOTE.—Links authorized prior to April
1987, need not comply with this requi
ment.]

[52 FR 7147, Mar. 9, 1987]

§ 94.81 Authorization of microwave equi ment.

(a) Except as provided in paragrap
(b) and for equipment used under
developmental authorization,
transmitters employed in this servi
must be either type accepted or not
fied pursuant to the requirements co
tained in subpart J of part 2 of th
chapter. As of March 5, 1984,
equipment designed exclusively fo
fixed operation shall be approve
under the notification procedure (se
§ 2.904(d) of this chapter).

(b) Type acceptance or notificati
is not required for portable transmit
ters operating with a peak outpu

power not greater than 250 mW. If operation of such equipment causes harmful interference the FCC may, at its discretion, require the licensee to take such corrective action as is necessary to eliminate the interference. Transmitters designed for use in the 31.0 to 31.3 GHz band shall be authorized under the notification procedure.

[49 FR 34018, Aug. 28, 1984, as amended at 50 FR 7345, Feb. 22, 1985]

§ 94.83 Transmitter control requirements.

Each transmitter shall be so installed and protected that it is not accessible to or capable of operation by persons other than those duly authorized by the licensee.

§ 94.85 Transmitter measurements.

(a) The licensee of each station shall employ a suitable procedure to determine that the carrier frequency of each transmitter is maintained within the tolerance prescribed in this part. This determination shall be made, and the results thereof entered in the station records in accordance with the following:

(1) When the transmitter is initially installed;

(2) When any change is made in the transmitter which may affect the carrier frequency or its stability.

(b) The licensee of each station shall employ a suitable procedure to determine that the power delivered by the transmitter to the antenna and the maximum effective radiated power (ERP) does not exceed the limitations specified in the microwave station authorization. Such a procedure may consist of measuring the power output of the transmitter, recording the measurements, and calculating both the power delivered to the antenna system and the ERP. This determination shall be made, and the results thereof entered in the station records in accordance with the following:

(1) When the transmitter is initially installed;

(2) When any change is made in the transmitter which may affect the power delivered to the antenna or the ERP.

[42 FR 24277, May 13, 1977]

§ 94.88 Special provision for low power systems in the 17,700–19,700 MHz band.

Notwithstanding other provisions in this Rule part, licensees of the five point-to-multipoint channel pairs listed in § 94.65(j)(8) may operate multiple low power transmitting devices within a defined service area. The service area will be a 28 kilometer omnidirectional radius originating from specified center reference coordinates. The specified center coordinates must be no closer than 56 kilometers from any co-channel nodal station or the specified center coordinates of another co-channel system. Applicants/licensees do not need to specify the location of each individual transmitting device operating within their defined service areas. Such operations are subject to the following requirements on the low power transmitting devices:

(a) Power must not exceed one watt EIRP and 100 milliwatts transmitter output power.

(b) A frequency tolerance of .001% must be maintained.

(c) The mean power of emissions shall be attenuated in accordance with the following schedule:

(i) In any 4 kHz band, the center frequency of which is removed from the center frequency of the assigned channel by more than 50 percent of the channel bandwidth and is within the bands 18,820–18,870 MHz or 19,160–19,210 MHz:

$A=35+.003(F-0.5B)$ Db

or,

80 dB (whichever is the lesser attenuation).

Where

A = Attenuation (in decibles) below output power level contained within the channel for a given polarization.

B = Bandwidth of channel in kHz.

F = Absolute value of the difference between the center frequency of the 4 kHz band measured at the center frequency of the channel in kHz.

(ii) In any 4 kHz band the center frequency of which is outside the bands 18,820–18,870 MHz or 19,160–19,210 MHz:

At least $43+10\log_{10}$ (mean output power in Watts) decibles.

[55 FR 18889, May 7, 1990]

§ 94.90 Special provisions for low power, limited coverage systems in the 12,200–12,700 MHz band.

Notwithstanding any contrary provisions in this part, the frequency pairs 12,220/12,460, 12,260/12,500, 12,300/12,540 and 12,340/12,580 may be authorized for low power, limited coverage systems subject to the following:

(a) Maximum effective radiated power (ERP) shall be 55 dBm.

(b) The rated transmitter output power shall not exceed 0.500 watts.

(c) Frequency tolerance shall be maintained to within 0.01 percent of the assigned frequency.

(d) Maximum beamwidth not to exceed 4 degrees. However, the sidelobe suppression criteria contained in § 94.75(b) of this part shall not apply, except that a minimum front-to-back ratio of 38dB shall apply.

(e) Upon a showing of need, a maximum bandwidth of 12 MHz may be authorized per frequency assigned.

(f) Radio systems authorized under the provisions of this section shall have no more than three hops in tandem but in any event, the maximum tandem length of the system should not exceed 25 miles.

(g) Interfering signals at the receiver antenna terminals of stations authorized under this section shall not exceed −90 dBm and −70 dBm, respectively, for co-channel and adjacent channel interfering signals.

(h) Stations authorized under the provisions of this section shall provide the protection from interference specified in § 94.63 of this part to stations operating in accordance with the other provisions of this part.

[40 FR 53398, Nov. 18, 1975, as amended at 49 FR 36378, Sept. 17, 1984]

§ 94.91 Special provisions for low power, limited coverage systems in the band segments 21.8–22.0 GHz and 23.0–23.2 GHz.

Notwithstanding any contrary provisions in this part the frequency pairs 21.825/23.025 GHz, 21.875/23.075 GHz, 21.925/23.125 GHz and 21.975/23.175 GHz may be authorized for low power, limited coverage, systems subject to the following provisions:

(a) Maximum effective radiated power (ERP) shall be 55 dBm.

(b) The rated transmitter output power shall not exceed 0.100 watts.

(c) Frequency tolerance shall be maintained to within 0.05 percent of the assigned frequency.

(d) Maximum beamwidth not to exceed 4 degrees. However, the sidelobe suppression criteria contained in § 94.75(b) of this part shall not apply, except that a minimum front-to-back ratio of 38 dB shall apply.

(e) Upon showing of need, a maximum bandwidth of 50 MHz may be authorized per frequency assigned.

(f) Radio systems authorized under the provisions, of this section shall have no more than five hops in tandem, except upon showing of need, but in any event the maximum tandem length shall not exceed 40 km (25 miles).

(g) Interfering signals at the antenna terminals of stations authorized under this section shall not exceed 90 dBm and 70 dBm respectively, for co-channel and adjacent channel interfering signals.

(h) Stations authorized under the provisions of this section shall provide the protection from interference specified in § 94.63 to stations operating in accordance with the provisions of this part.

(i) Antennas employing circular polarization may be used in operational-fixed systems operating under the provisions of this Section. In such cases, antenna polarization shall be defined either as clockwise or counterclockwise, as described in § 94.75(c).

(Secs. 4, 303, 48 Stat., as amended, 1066, 1082, 1083 (47 U.S.C. 154, 303, 307))

[45 FR 55734, Aug. 21, 1980]

§ 94.92 Technical standards for stations authorized prior to July 1, 1976.

The technical standards indicated in the table in this section apply to private microwave systems using the frequency bands above 952 MHz listed in the table and which were authorized prior to July 1, 1976, but after July 20, 1961. These standards shall not be applicable to transmitting equipment, including antennas, which was authorized to be operated on these frequencies prior to July 20, 1961, or for which an authorization was issued based on an application filed with the Commission prior to July 20, 1961.

Microwave Technical Standards Table

Frequency band—megahertz	Power [1] (watts)	Tolerance (percent)	Bandwidth [2]	Beamwidth [3] (degrees)
952-960	[6] 30	0.0005	100 kHz	[7] 20
1850-1960	18	.02	8 MHz	10
2130-2150	15	.001	800 kHz	10
2150-2160	15	.001	10 MHz	360
2180-2200	15	.001	800 kHz	10
2450-2500 [4]	12	([5])	([5])	([5])
2650-2656 [9]				
2662-2668 [9]				
2674-2680 [9]				
2686.9375 [9]				
2687.9375 [9]				
2688.9375 [9]				
525-6575	7	.02	25 MHz	7
575-6875	7	.02	10 MHz	5
0550-10680	5	([5])	25 MHz	4
2200-12700	5	.05	20 MHz	4
bove 16000	5	([5])	50 MHz	([5])

[1] Maximum rated power output of transmitter. Power in cess of that shown herein will be authorized only if pecifically provided on a particular frequency or under ceptional circumstances based upon a factual showing of ed. For pulsed systems average power shall be limited to e values shown, peak power shall not exceed five times is limit.

[2] Maximum bandwidth (necessary or occupied, whichever greater) which will be authorized. Except in the 2130–2150 d 2180–2200 MHz bands, consideration will be given, on a se-by-case basis, to requests for additional adjacent chans based upon a complete and specific factual showing of ique or unusual circumstances, apart from economic conerations, requiring such additional channels. In the band 2-960 MHz, bandwidths up to 500 kHz may be authorized.

[3] Maximum beamwidth of major lobe between 0.5 power nts in horizontal plane. Exceptions may be granted for tions in remote areas or until harmful interference is sed to other stations operating in accordance with these visions.

Subject to no protection from ISM equipment on 2450 z.

To be specified in the station authorization.

This frequency band is available only for operational-fixed tions employing television transmissions. The transmitting ipment for such stations shall meet the technical stands prescribed in § 94.95. Use of these frequencies in the strial radio service is secondary to stations in the public ty radio service. Operational-fixed stations authorized in band 2500–2690 MHz prior to July 16, 1971, may tinue to be authorized on a coequal basis to other ons operating in accordance with the Table of Frequency cations. No expansion of existing systems on frequencies allocated to this service will be permitted. Additional ons or new assignments may be authorized only in ordance with the provisions of this section.

Except for the frequencies 952.1, 952.2, 952.3, 952.4, 4, 956.5, 959.8, and 959.9 MHz where the antenna may omnidirectional, and except for the frequencies 952.8, 9, 956.2, and 956.3 MHz which may be used only with ctional antennas with a minimum gain of 7.5 dBd in the r lobe and no more than —3 dBd gain in any direction or more off the axis of the major lobe.

Except for the frequencies 952.4, 952.2, 952.3, 952.4, 4, 956.5, 959.8, and 959.9 MHz where the maximum r may be 100W.

esponse *frequencies.* When authorized they are to be d respectively with the bands 2650–2656, 2662–2668, 2674–2680 MHz, and used in accordance with the ical standards prescribed in § 94.95.

[41 FR 51403, Nov. 22, 1976; 41 FR 53028, Dec. 3, 1976, as amended at 48 FR 1501, Jan. 13, 1983; 50 FR 26763, June 28, 1985]

§ 94.93 Provisions for Private Operational Fixed use of the 12,200–12,700 MHz Band.

(a) Operational Fixed stations which were authorized in the 12,200-12,700 MHz band on or before September 9, 1983, shall not be required to protect operating domestic broadcasting satellite systems from interference until September 9, 1988. After this date, these Operational Fixed stations may continue operation on a non-interference basis to Direct Broadcast Satellite service reception and shall be required to make any and all adjustments necessary to prevent interference to operating broadcasting-satellite systems.

(b) Operational-fixed stations authorized in the 12,200-12,700 MHz band after September 9, 1983, shall be required to protect operating domestic broadcasting satellite systems from interference.

(c) Any Operational-fixed stations authorized in the 12,200-12,700 MHz band must not cause interference to broadcasting-satellite systems of other administrations operating in accordance with the plan developed by the 1983 Regional Administrative Radio Conference.

(d) Stations authorized on frequencies in the 12,200 to 12,700 MHz band as of September 9, 1983, except for those authorized under § 94.90, are allowed use of certain other bands listed below in accordance with the provisions of this paragraph. Authority to use the frequencies or special provisions of this paragraph, will not apply to additional system links (transmitter-receiver pair) not licensed as of September 9, 1983. Licensees intending to take advantage of the special reaccommodation provisions provided in this paragraph must submit applications by September 9, 1988.

(1) *Available Frequencies.*

Transmit (or receive) (MHz)	Receive (or transmit) (MHz)
(i) 6,525 to 6,875 MHz, 10 MHz channels.	
10 MHz channels:[1]	
6,545	6,715
6,555	6,725
6,565	6,735
6,585	6,745
6,595	6,755
6,605	6,765
6,615	6,775
6,625	6,785
6,635	6,795
6,645	6,805
6,655	6,815
6,665	6,825
6,675	6,835
6,685	6,845
6,695	6,855
6,705	6,865
(ii) 12,700 to 13,150 MHz, 25 MHz channels.	
25 MHz channels:[1]	
12,712.5	12,937.5
12,725.0	12,950.0
12,737.5	12,962.5
12,750.0	12,975.0
12,762.5	12,987.5
12,775.0	13,000.0
12,787.5	13,012.5
12,800.0	13,025.0
12,812.5	13,037.5
12,825.0	13,050.0
12,837.5	13,062.5
12,850.0	13,075.0
12,862.5	13,087.5
12,875.0	13,100.0
12,887.5	13,112.5
12,900.0	13,125.0
12,912.5	13,137.5
(iii) 12,700 to 13,150 MHz, 12.5 MHz channels.	
12,706.25	12,931.25
12,718.75	12,943.75
12,731.25	12,956.25
12,743.75	12,968.75
12,756.25	12,981.25
12,768.75	12,993.75
12,781.25	13,006.25
12,793.75	13,018.75
12,806.25	13,031.25
12,818.75	13,043.75
12,831.25	13,056.25
12,843.75	13,068.75
12,856.25	13,081.25
12,868.75	13,093.75
12,881.25	13,106.25
12,893.75	13,118.75
12,906.25	13,131.25
12,918.75	13,143.75

In addition to the above center frequencies, alternative channeling may be used (20 MHz or 6 MHz-wide channels). Frequency pairs may be used for two-way links or one frequency of a pair may be used for a one-way link. Use is subject to the coordination procedure in paragraph (d)(2) of this section.

(2) *Coordination Procedure.* (i) Before filing an application for new or modified facilities under this paragraph the applicant must perform a frequency engineering analysis to ensure that the proposed facilities will not cause interference to existing or previously applied for stations in this band of a magnitude greater than that specified below.

(ii) The general criteria for determining allowable adjacent or co-channel interference protection to be afforded, regardless of system length or type of modulation, multiplexing or frequency band shall be such that the interfering signal shall not produce more than 1.0 dB degradation of the practical threshold of the protected receiver, applied by calculating the ratio in dB between the desired carrier signal and undesired interfering signal (C/I ratio) appearing at the input to the receiver under investigation (the victim receiver). The development of the C/I ratios from the criteria for maximum allowable interference level per exposure and the methods used to perform patch calculations shall follow generally acceptable good engineering practices. Procedures as may be developed by the Electronics Industries Association (EIA), the Institute of Electrical and Electronics Engineers, Inc. (IEEE), the American National Standards Institute (ANSI) or any other recognized authority will be acceptable to the Commission.

(iii) Where the development of the carrier to interference ratio (C/I) is not covered by generally acceptable procedures or where the applicant does not wish to develop the carrier to interference ratio the applicant shall employ the following C/I protection ratios:

(A) *Co-channel interference:* Both sideband and carrier-beat, applicable to all bands, the previously authorized system shall be afforded a carrier to interfering signal protection ratio of at least 90 dB.

(B) *Adjacent channel interference:* The existing or previously authorized system shall be afforded a carrier to

terfering signal protection ratio of
ast 56 dB.
(iv) For the band 6525–6875 MHz:
he existing coordination requirement
§ 94.63 as it relates to this band
all be followed.
(3) *Applications Mutually Exclusive*
th other Applications. In the event
at applications filed by OFS licens-
s in the 12.2–12.7 GHz band pursu-
t to the reaccommodation provisions
this paragraph (d) are mutually ex-
sive with other applications, the ap-
cations of the 12 GHz OFS licensees
all be granted over other applica-
ns.
4) *Technical Standards*—(i) *Power*
nits. All stations authorized under
s paragraph shall be limited to the
lowing:

er: All bands, 10 watts maximum trans-
itter output power
P: All bands, 80 dBm

i) *Antenna Standards.* Antennas
eting Standard B of § 94.75 can be
d by all systems authorized under
s paragraph, except that a higher
formance antenna meeting Stand-
A will be used where interference
blems can be resolved by the use of
h antennas.
ii) *Types of Emission.* Any modula-
type available for use by stations
horized in the Private Operational
ed Microwave Services are allowed
the frequencies provided in this
agraph.

s. 4(i), 301 and 303(r), Federal Commu-
tions Act of 1934, as amended, 47 U.S.C.
301 and 303(r))

R 50738, Nov. 3, 1983, as amended at 49
7782, Sept. 26, 1984]

94 Microwave digital modulation.

icrowave transmitters employing
al modulation techniques in the
ls 10,550–10,680 and 17,700–19,700
shall transmit at bit rate, in bits
second (bps), equal to or greater
the authorized bandwidth in
z (e.g., to be acceptable, equip-
transmitting at a 20 Mbps rate
not require an authorized band-
h greater than 20 MHz). In the
0–19,700 MHz band, this bps/Hz
dard is independent of the anten-
(polarization) used, frequency
, or how the system is configured.

NOTE: Until December 1, 1988, no minimum bit rate shall apply to the 17,700–19,700 MHz band. Systems authorized prior to that date may install equipment after that date with no minimum bit rate.

(Secs. 4(i), 301 and 303(r), Federal Communications Act of 1934, as amended, 47 U.S.C. 4(i), 301 and 303(r))

[49 FR 37782, Sept. 26, 1984]

§ 94.95 Special provisions for operational-fixed stations in the 2500–2690 MHz band.

Notwithstanding any contrary provisions in this part, the channels 2650–2656 MHz, 2662–2668 MHz, and 2674–2680 MHz, and the corresponding response channels 2686.9375 MHz, 2687.9375 MHz, and 2688.9375 MHz may be authorized for operational-fixed service use subject to the following technical standards:

(a) *Emissions and bandwidth.* The average power of radio frequency harmonics of the visual and aural carriers, measured at the output terminals of the transmitter, shall be attenuated no less than 60 dB below the peak visual output power within the assigned channel. All other emissions appearing on frequencies more than 3 MHz above or below the upper and lower edges, respectively, of the assigned channel shall be attenuated no less than: (1) 30 dB for transmitters rated at less than 10 watts visual peak power output. (2) 40 dB for transmitters rated at 10 watts or more visual peak power output. Should interference occur as a result of emissions outside the assigned channel, greater attenuation may be required.

(b) *Antennas.* (1) In order to minimize the hazard of harmful interference from other stations, directive receiving antennas should be used at all receiving points. The choice of receiving antennas is left to the discretion of the licensee. However, should interference occur and it can be demonstrated that such interference could be eliminated through the use of a more suitable yet practical directive receiving antenna, the licensee of the station causing the interference is absolved of the responsibility of correcting the interference condition.

(2) Directive transmitting antennas shall be used whenever feasible so as

to minimize interference to other licensees. The radiation pattern shall be designed to minimize radiation in directions where no reception is intended. When a station is used for point-to-point service, an appropriate directional antenna must be used.

(3) In selecting a location for the transmitting antenna, it should be borne in mind that interference to the reception of its transmission is most likely to come from the direction in which receiving antennas must be aimed to receive its transmissions. Whenever possible the location should be chosen so that the receiving antennas in its system are aimed in directions from which interfering signals are least likely to come.

(4) The use of elevated receiving antennas is preferable to the use of elevated transmitting antennas or greater power to provide the desired service.

(5) The use of vertical or horizontal plane polarization or right-hand or left-hand rotating (circular) polarization may be used to minimize the hazard of harmful interference between systems. The Commission reserves the right to specify the polarization to be used.

(6) The power gain compared to an isotropic antennas and the directive properties of the transmitting and receiving antennas proposed to be employed, as well as the geometric distribution of the transmitting and receiving point, shall be supplied with each application for a new fixed station or for changes in the antenna facilities of an existing station.

(c) *Transmission standards.* Stations in this band are not required to attenuate the lower sideband by any specified amount unless interference to the reception of another station results from emissions in excess of those permitted television broadcast stations, in which case the attenuation specified in § 73.687(a)(3) of this chapter shall apply. However, in no case shall the amplitude of any lower sideband component exceed the amplitude of the upper sideband component having the highest amplitude.

(d) *Acceptability of equipment for licensing.* (1) Transmitters employed in this service must have type acceptance by the Commission. Type acceptance may be given under either of the following conditions:

(i) A transmitter or translator may be type accepted upon the request of any manufacturer of such equipment built in quantity by following the type acceptance procedure set forth in part 2 of this chapter, provided that the date and information submitted indicate that the equipment meets all technical requirements applicable to this service. If accepted, such transmitting equipment will be included on the Commission's "Radio Equipment List, Equipment Acceptable for Licensing." Applicants specifying equipment included on such a list need not submit detailed descriptions and diagrams where the correct type number is specified, provided that the equipment proposed is identical with the accepted. Copies of the Radio Equipment List are available for inspection at the Commission's office in Washington, D.C., and at each of its field offices.

(ii) An application specifying a transmitter or translator not included on the Radio Equipment List, may be accepted upon the request of a prospective licensee submitting a complete description of the equipment, including the circuit diagram, listing of all tubes used, function of each, multiplication in each stage, plate current and voltage applied to each tube, and a description of the oscillator circuit together with any devices installed for the purpose of frequency stabilization. However, if this data has been filed with the Commission by a manufacturer in connection with a request for type acceptance, it need not be submitted with the application but may be referred to as "on file." Measurement data for type acceptance made in accordance with paragraph (d)(1)(i) of this section shall be submitted with the license application.

(2) Additional rules with respect to withdrawal of type acceptance, modification of type accepted equipment, and limitations on the findings upon which type acceptance is based are set forth in part 2 of this chapter.

(e) *Frequency tolerance.* (1) The frequency of the visual carrier shall be maintained within 60 Kilocycles of the assigned frequency at all times when the station is in operation.

(2) The frequency of the aural carrier shall be maintained in accordance with the provisions of § 73.687(c)(1) of this chapter.

[50 FR 26763, June 28, 1985]

Subpart D—Station Operating Requirements

§ 94.101 Suspension of transmission required.

The radiation of the transmitter shall be suspended immediately upon notification by the Commission of a deviation from the technical requirements of the station authorization when such deviation causes harmful interference to another licensee. Until such deviation is corrected, only transmissions concerning the immediate safety of life or property may be conducted, except that such transmissions shall be suspended as soon as the emergency is terminated. In the absence of harmful interference, upon detection or notification by the Commission of deviation from the technical requirements of the station authorization, transmission may continue *Provided*, That the licensee takes immediate steps to correct the deviation involved.

§ 94.103 Operator requirements.

(a) No operator license is required for the operation, maintenance, or repair of stations licensed under this part.

(b) An unlicensed person, with the consent or authorization of the licensee, may employ stations in this service for the purpose of telecommunications in accordance with the conditions and limitations set forth in § 94.17 of this part.

(c) The station licensee shall be responsible for the proper operation of the station at all times and is expected to provide for observations, servicing and maintenance as often as may be necessary to ensure proper operation. All adjustments or tests during or concident with the installation, servicng, or maintenance of the station hould be performed by or under the mmediate supervision and responsibility of a person certified as technically qualified to perform transmitter installation, operation, maintenance, and repair duties in the private land mobile services and fixed services by an organization or committee representative of users in those services.

(d) The provisions of paragraph (b) of this section authorizing unlicensed persons to operate stations shall not be construed to change or diminish in any respect the responsibility of station licensees to have and to maintain control over the stations licensed to them (including all transmitter units thereof), or for the proper functioning and operation of those stations (including all transmitter units thereof) in accordance with the terms of the licenses of those stations.

(Secs. 4(i) and 303(r), Communications Act of 1934, as amended, 47 U.S.C. 154(i) and 303(r), and sec. 553 of the Administrative Procedures Act, 5 U.S.C. 553)

[40 FR 20928, May 13, 1975, as amended at 49 FR 20672, May 16, 1984; 50 FR 13352, Apr. 4, 1985]

§ 94.105 Station identification.

Stations in this service are exempt from the requirement to identify transmissions by call sign or any other station identifier.

§ 94.107 Posting of station authorization and transmitter identification cards, plates, or signs.

(a) The original of each transmitter authorization in this service shall be posted or immediately available at the address at which station records are maintained as named in the authorization.

(b) A clear and legible copy of the current transmitter authorization shall be posted or be immediately available at the transmitter location.

(c) The requirements in paragraphs (a) and (b) of this section do not apply to remote stations using frequencies listed in § 94.65(a)(1).

[40 FR 20928, May 13, 1975, as amended at 46 FR 9955, Jan. 30, 1981]

§ 94.109 Inspection of stations and station records.

Any station and records of stations in this service shall be made available at any reasonable time for inspection by an authorized representative of the Commission.

§ 94.111 Inspection and maintenance of tower marking and associated control equipment.

The licensee of any radio station which has an antenna structure required to be painted or illuminated pursuant to the provisions of section 303(q) of the Communications Act of 1934, as amended, and/or part 17 of this chapter, shall operate and maintain the tower marking and associated control equipment in accordance with the following:

(a) The tower lights shall be observed at least once each 24 hours, either visually or by observing an automatic and properly maintained indicator designed to register any failure of such lights, to insure that all such lights are functioning properly as required; or, alternatively, there shall be provided and properly maintained an automatic alarm system designed to detect any failure of the tower lights and to provide indication of such failure to the licensee.

(b) Any observed or otherwise known failure of code of rotating beacon light or top light not corrected within thirty minutes, regardless of the cause of such failure, shall be reported immediately by telephone or telegraph to the nearest Flight Service Station or office of the Federal Aviation Administration. Further, notification by telephone or telegraph shall be given immediately upon resumption of the required illumination.

(c) All automatic or mechanical control devices, indicators, and alarm systems associated with the tower lights shall be inspected at intervals not to exceed three months, to insure that such apparatus is functioning properly.

(d) All lighting shall be exhibited from sunset to sunrise unless otherwise specified in the instrument of station authorization.

(e) A sufficient supply of spare lamps shall be maintained for immediate replacement purposes at all times.

(f) All towers shall be cleaned or repainted as often as is necessary to maintain good visibility.

§ 94.113 Station records.

Each licensee of a station in th service shall maintain records in cordance with the following:

(a) For all stations, the results a dates of the transmitter measur ments required by § 94.85 and th name of the person or persons makin the measurements.

(b) For all stations, when service maintenance duties are performe which may affect their proper ope ation, the responsible operator sha sign and date an entry in the statio record concerned, giving:

(1) Pertinent details of all transmi ter adjustments performed by him under his supervision;

(2) His name and address and th class, serial number, and expiratio date of his license, provided that thi information, so long as it remains un changed, is not required to be repeate in the case of a person who is regular ly employed as operator on a full-tim basis at the station.

(c) When a station in this service ha an antenna structure which is re quired to be illuminated, appropriat entries shall be made as follows:

(1) The time the tower lights ar turned on and off each day, if manual ly controlled.

(2) The time the daily check of proper operation of the tower lights was made, if an automatic alarm system is not employed.

(3) In the event of any observed or otherwise known failure of a tower light:

(i) Nature of such failure.

(ii) Date and time the failure was observed or otherwise noted.

(iii) Date, time, and nature of the adjustments, repairs, or replacements made.

(iv) Identification of Flight Service Station (Federal Aviation Administration) notified of the failure of any code or rotating beacon light not corrected within 30 minutes, and the date and time such notice was given.

(v) Date and time notice was given to the Flight Service Station (Federal Aviation Administration) that the required illumination was resumed.

(4) Upon completion of the 3-month periodic inspection required by § 94.111(c):

(i) The date of the inspection and the condition of all tower lights and associated tower lighting control devices, indicators, and alarm systems.

(ii) Any adjustments, replacements, or repairs made to insure compliance with the lighting requirements and the date such adjustments, replacements, or repairs were made.

(d) The records shall be kept in an orderly manner, and in such detail that the data required are readily available. Key letters or abbreviations may be used if proper meaning or explanation is set forth in the record.

(e) Each entry in the records of each station shall be signed by a person qualified to do so, having actual knowledge of the facts to be recorded.

(f) No record or portion thereof shall be erased, obliterated, or willfully destroyed within the required retention period. Any necessary correction may be made only by the person originating the entry, who shall strike out the erroneous portion, initial the correction made and indicate the date of correction.

(g) Records required by this part shall be retained by the licensee for a period of at least one year.

Subpart E—Developmental Operation

§ 94.151 Eligibility.

An authorization for developmental operation in this service may be issued for the purpose of developing a radiocommunication service or technique which offers reasonable promise of substantial contribution to the expansion or extension of the radio art, along lines not already investigated.

§ 94.153 Showing required.

Each application for developmental operation shall be accompanied by a showing that:

(a) The applicant has an organized plan of development leading to a specific objective;

(b) A point has been reached in the program where actual transmission by radio is essential to the further progress thereof;

(c) The program will be conducted by qualified personnel;

(d) The applicant is legally and financially qualified, and possesses adequate technical facilities for conduct of the program as proposed; and,

(e) The public interest, convenience, and necessity will be served by the proposed operation.

§ 94.155 Limitations on use.

Stations used for developmental operation shall be constructed and used in such a manner as to conform with all of the technical and operating requirements of subparts C and D of this part, unless deviation therefrom is specifically provided in the instrument of authorization.

§ 94.157 Frequencies available for assignment.

Stations engaged in developmental operation may be authorized to use a frequency, or frequencies, available for the service in which they propose to operate. The number of channels assigned will depend upon the specific requirements of the developmental program itself, and the number of frequencies available in the particular area where the station will be operated.

§ 94.159 Interference.

The operation of any station engaged in developmental work shall be subject to the condition that no harmful interference is caused to the operation of stations licensed on a regular basis under any part of the Commission's rules.

§ 94.161 Special provisions.

(a) The developmental program as described by the applicant in the application for authorization shall be substantially followed unless the Commission shall otherwise direct.

(b) Where some phases of the developmental program are not covered by the general rules in this chapter and the rules in this part, the Commission may specify supplemental or additional requirements or conditions in each case, as deemed necessary in the public interest, convenience, and necessity.

(c) The Commission may, from time to time, require a station engaged in developmental work to conduct special tests which are reasonable and desirable to the authorized developmental program.

[40 FR 20928, May 13, 1975; 40 FR 26677, June 25, 1975]

§ 94.163 Required supplementary statement.

Every application for authority to engage in developmental operation shall be accompanied by a statement signed by the applicant in which it is agreed that any authorization issued pursuant thereto will be accepted with the express understanding of the applicant that it is subject to change in any of its terms or to cancellation in its entirety at any time, upon reasonable notice but without a hearing, if, in the opinion of the Commission, circumstances should so require.

§ 94.165 Report of operation.

(a) A report on the results of the developmental program shall be filed with and made a part of each application for renewal of authorization or in cases where no renewal is requested, such report shall be filed within 60 days of the expiration of such authorization. Matters which the applicant does not wish to disclose publicly may be so labeled; they will be used solely for the Commission's information, and will not be publicly disclosed without permission of the applicant.

(b) The report shall include comprehensive and detailed information on the following:

(1) The final objective.

(2) Results of operation to date.

(3) Analysis of the results obtained.

(4) Copies of any published reports.

(5) If continued operation is desired, the need therefor.

(6) Number of hours of operation on each frequency.

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Appendix 1 to Part 95—Glossary of Ter

AUTHORITY: Secs. 4, 303, 48 Stat.
1082, as amended; 47 U.S.C. 154, 303.

Subpart A—General Mobile Rad
Service (GMRS)

SOURCE: 48 FR 35237, Aug. 3, 1983, u
otherwise noted.

GENERAL PROVISIONS

§ 95.1 The General Mobile Radio Ser
(GMRS).

(a) The *GMRS* is a land mobile r
service available to persons for sh
distance two-way communications
facilitate the activities of licensees
their immediate family memb
Each licensee manages a system c
sisting of one or more stations.

(b) Any entity eligible for licens
under this subpart is eligible to obt
an authorization in the 31.0 to 3
GHz band for personal communi
tions, provided that the techni
standards applicable to the band
set out in part 94) are observed. (In
viduals applying for stations in t
31.0 to 31.3 GHz band for perso
communications shall use applicati
Form 402.)

[48 FR 35237, Aug. 3, 1983, as amended at
FR 7345, Feb. 22, 1985; 53 FR 47714, N
25, 1988]

§ 95.3 License required.

Before any station transmits on a
channel authorized in the GM

from any *point* (a geographical location) within or over the territorial limits of any area where radio services are regulated by the FCC, the responsible party must obtain a *license* (a written authorization from the FCC for a GMRS system).

[53 FR 47714, Nov. 25, 1988]

§ 95.5 License eligibility.

An *individual* (one man or one woman) is eligible to obtain, renew and have modified a GMRS system license if that individual is 18 years of age or older and is not a representative of a foreign government. A *non-individual* (an entity other than an individual) is ineligible to obtain a new GMRS system license or to make a major modification to an existing GMRS system licenses (see § 95.71(e)). Certain non-individuals are eligible to renew existing GMRS system license (see § 95.89 (c) and (d)).

[53 FR 47714, Nov. 25, 1988; 53 FR 51625, Dec. 22, 1988]

§ 95.7 Channel sharing.

(a) Channels or channel pairs are available to GMRS systems only on a shared basis and will not be assigned for the exclusive use of any licensee. All station operators and GMRS system licensees must cooperate in the selection and use of channels to reduce interference and to make the most effective use of the facilities.

(b) Licensees of GMRS systems suffering or causing harmful interference are expected to cooperate and resolve this problem by mutually satisfactory arrangements. If the licensees are unable to do so, the FCC may impose restrictions including specifying the transmitter power, antenna height, or area or hours of operation of the stations concerned. Further, the use of any frequency at a given geographical location may be denied when, in the judgment of the FCC, its use in that location is not in the public interest; the use of any channel or channel pair may be restricted as to specified geographical areas, maximum power, or other operating conditions (see § 95.71(d)).

[48 FR 35237, Aug. 3, 1983, as amended at 53 FR 47715, Nov. 25, 1988]

CONSIDERATIONS WHEN PLANNING A GMRS SYSTEM

§ 95.21 GMRS system description.

(a) *A GMRS system* is one or more transmitting units used by station operators to communicate messages. A GMRS system is comprised of:

(1) One or more station operators;

(2) One mobile station consisting of one or more mobile units (see § 95.23);

(3) One or more land stations (optional); and

(4) Paging receivers (optional).

(b) In certain areas, point-to-point GMRS systems may be comprised of fixed stations only (see §§ 95.47, 95.49 and 95.61).

(c) A GMRS system may be operated in:

(1) *Simplex mode.* (Only one station operator can speak at a time.)

(2) *Duplex mode.* (Two station operators can speak at the same time. One or more stations transmit on one channel. The other station(s) transmit(s) on the channel pair counterpart.)

(3) *A combined simplex-duplex mode.* (E.g., a mobile relay system with mobile units operating in simplex mode on a channel pair.)

§ 95.23 Mobile station description.

(a) A *mobile station* is one or more units which transmit while moving or during temporary stops at unspecified points.

(b) A mobile station unit may transmit from any point within or over any areas where radio services are regulated by the FCC *except* where additional considerations apply (see §§ 95.37 through 95.49).

(c) A mobile station unit may transmit from an aircraft or ship, with the captain's permission, which is:

(1) Within or over any area where radio services are regulated by the FCC *except* where additional restrictions apply; and

(2) On or over international waters, if the unit is transmitting from an aircraft or ship of United States registry.

(d) A mobile station unit must not transmit from points within or over the territorial limits of any area where radio services are regulated only by:

(1) A foreign government; or

(2) A United States government agency other than the FCC.

[48 FR 35237, Aug. 3, 1983, as amended at 49 FR 4003, Feb. 1, 1984]

§ 95.25 Land station description.

(a) A *land station* is a unit which transmits only from:

(1) An exact point as shown on the license; or

(2) An unspecified point within an *operating area* (an area within a circle centered on a point chosen by the applicant) as shown on the license, for a *temporary period* (one year or less).

(b) The point from which every land station transmits must be within an area where radio services are regulated by the FCC.

(c) Each land station is classified according to its *communications points* (the other stations or paging receivers to which the station operator communicates messages). There are four *land station classes:*

(1) Base station (see § 95.55);

(2) Mobile relay station (see § 95.57);

(3) Control station (see § 95.59); and

(4) Fixed station (see § 95.61).

(d) A *small control station* is any control station which:

(1) Has an antenna no more than 6.1 meters (20 feet) above the ground or above the building or tree on which it is mounted (see § 95.51); and

(2) *Is:* (i) South of Line A or west of Line C (see § 95.37); or

(ii) North of Line A or east of Line C, and the station transmits with no more than 5 watts *ERP* (effective radiated power).

(e) A *small base station* is any base station that:

(1) Has an antenna no more than 6.1 meters (20 feet) above the ground or above the building or tree on which it is mounted (see § 95.51); and

(2) Transmits with no more than 5 watts ERP.

(f) A land station may be licensed to transmit as more than one station class. (*Example:* A land station is licensed as both a base station and a control staton. When it is transmitting as a base station its communication points are those of a base station (see § 95.55). When it is transmitting as a control station its communication points are those of a control stati (see § 95.59).)

[48 FR 35237, Aug. 3, 1983, as amended at FR 47715, Nov. 25, 1988; 53 FR 51625, D 22, 1988]

§ 95.27 Paging receiver description.

A *paging receiver* is a unit capable receiving the radio signals from a ba station for the bearer to hear a pa (someone's name or other identifi said in order to find, summon or noti him/her) spoken by the base statio operator.

§ 95.29 Channels available.

(a) The licensee of the GMR system must select the transmittin channel or channel pair for the st tions in the GMRS system from th following lists:

(1) For a base station, mobile rela station, fixed station or mobile statio the following 462 *MHz* (megahert channels;

462.5500, 462.5750, 462.6000, 462.625 462.6500, 462.6750, 462.7000 and 462.7250.

(2) For a mobile station, control sta tion or fixed station operated in th duplex mode, the following 467 MH channels:

467.5500, 467.5750, 467.6000, 467.625 467.6500, 467.6750, 467.7000, and 467.7250.

(3) As of December 31, 1993, the 46 MHz channels may be used only t transmit communications through mobile relay station and for remotel controlling a mobile relay station. As of December 31, 1993, no station in GMRS system may transmit communications *directly* (not through mobile relay station) on the 467 MHz channels.

(b) The FCC will normally assign only one channel or one *channel pair* (one 462 MHz channel and its counterpart 5 MHz spaced 467 MHz channel) to a GMRS system comprised of stations intended for operation in the simplex mode. A second channel or channel pair will be assigned at the request of the applicant.

(c) The FCC will normally assign only one channel pair to a GMRS system comprised of stations intended for operation in the duplex mode. A second channel pair will be assigned at the request of the applicant.

(d) No GMRS system may be assigned more than two channels or channel pairs. Stations in certain GMRS systems may, however, also transmit on additional frequencies listed in the following paragraphs, in accord with the conditions specified.

(e) Mobile stations in a GMRS system licensed to an individual that is not specifically authorized for the 462.675 MHz/467.675 MHz channel pair may transmit on that channel pair with the following limitations:

(1) The communications must be for the purpose of soliciting or rendering assistance to a traveler, or for comunicating in an emergency pertaining to the immediate safety of life or the immediate protection of property; and

(2) The frequency 467.675 MHz may be used only for the purposes of accessing and communicating through a mobile relay station transmitting on 462.675 MHz.

(f) Except for a GMRS system licensed to a non-individual, a mobile station or a small base station operating in the simplex mode may transmit on the following 462 MHz interstitial channels:

462.5625, 462.5875, 462.6125, 462,6375, 462.6625, 462.6875 and 462.7125.

These channels may be used only under the following conditions:

(1) Only voice type emissions may be transmitted;

(2) The station does not transmit one-way pages; and

(3) The station transmits with no more than 5 watts ERP.

(g) Fixed stations in GMRS systems authorized before March 18, 1968, located 160 kilometers (100 miles) or more from the geographic center of urbanized areas of 200,000 or more population as defined in the U.S. Census of Population, 1960, Vol. 1, Table 23, page 50 that were authorized to transmit on channels other than those listed in this section may continue to transmit on their originally assigned channels provided that they cause no interference to the operation of stations in any of the part 90 private land mobile radio services.

[53 FR 47715, Nov. 25, 1988]

§ 95.31 Overlap of GMRS systems.

An entity may not have a base station or a mobile relay station for that entity's GMRS system within 64.4 kilometers (40 miles) of a base station or a mobile relay station for another GMRS system licensed to the same entity. Base stations and mobile relay stations licensed to the same entity in two different GMRS systems less than 64.4 kilometers (40 miles) apart which were authorized prior to October 16, 1983 are not subject to the provisions of this rule.

[48 FR 35237, Aug. 3, 1983, as amended at 49 FR 4003, Feb. 1, 1984]

§ 95.33 Cooperative use of radio stations in the GMRS.

(a) *Licensees* (a licensee is the entity to which the license is issued) of radio stations in the GMRS may share the use of their stations with other entities eligible in the GMRS, subject to the following conditions and limitations.

(1) The station to be shared must be individually owned by the licensee, jointly owned by the participants and the licensee, leased individually by the licensee, or leased jointly by the participants and the licensee.

(2) The licensee must maintain access to and control over all stations authorized under its license.

(3) A station may be shared only:

(i) Without charge;

(ii) On a non-profit basis, with contributions to capital and operating expenses including the cost of mobile stations and paging receivers prorated equitably among all participants; or

(iii) On a reciprocal basis, i.e., use of one licensee's stations for the use of another licensee's stations without charge for either capital or operating expenses.

(4) All sharing arrangements must be conducted in accordance with a written agreement to be kept as part of the station records.

(b) Participants in a cooperatively shared GMRS mobile relay or base station may obtain a license for their own mobile station(s), provided that the licensee of the shared GMRS station consents in writing to the issuance of such authorization.

§ 95.35 Multiple licensing of radio transmitting equipment in the GMRS.

Two or more persons licensed in the GMRS may use the same transmitting equipment under the following terms and conditions:

(a) Each licensee complies with the general operating requirements set out in §§ 95.171 through 95.181 of the rules; and

(b) Each licensee must have access to the transmitter for which the licensee is authorized.

§ 95.37 Considerations near the Canadian border.

The United States and the Government of Canada coordinate channel assignments to certain radio stations in areas along their common borders north of Line A and east of Line C. (See § 1.955 of the FCC Rules.)

§ 95.39 Considerations near FCC monitoring facilities.

The FCC may impose additional restrictions on a land station in a GMRS system if it is at a point within 4.8 kilometers (3 miles) of an FCC monitoring facility and the station's transmissions degrade, obstruct, or repeatedly interrupt the operation of the equipment at the FCC monitoring facility. Before applying for license to put a land station at such a point, or before applying to change anything in a station already licensed for such a point, you should consult the FCC by writing to the Chief, Field Operations Bureau, Federal Communications Commission, Washington, DC 20554.

[53 FR 47715, Nov. 25, 1988]

§ 95.41 Considerations in the National Radio Quiet Zone.

(a) The FCC may impose additional restrictions on a land station in a proposed GMRS system, or on one in a GMRS system proposed for modification, if the station is proposed for or located at a point within the *National Radio Quiet Zone* (an area within the States of Maryland, Virginia and West Virginia). The Zone is the area bounded by:

(1) 39°15′ N. on the North;

(2) 78°30′ W. on the East;

(3) 37°30′ N. on the South; and

(4) 80°30′ W. on the West.

(b) When applying for a license to put a land station at a point in the National Radio Quiet Zone, or when applying to change certain details in a station already licensed for such a point, the applicant must send a notice to the National Radio Astronomy Observatory (see § 95.79).

(c) Restrictions may be imposed if the National Radio Astronomy Observatory files an objection with the FCC within 20 days after the application is filed with the FCC.

§ 95.43 Environmental considerations.

An application for AMRS system that includes a local station which may have a significant impact upon the environment, as specified in § 1.1307 of this chapter, must be accompanied by an environmental assessment as set forth in § 1.1311 of this Chapter.

[55 FR 20398, May 16, 1990]

§ 95.45 Considerations on Department of Defense land.

The Department of Defense may impose additional restrictions on a station transmitting on its land. (Before applying to place or modify a station at such a point, an applicant should consult with the commanding officer in charge of the land.)

§ 95.47 Considerations in large urban areas.

(a) No fixed station may be at any point within a large urban area.

(b) A control station at a point within a large urban area must have:

(1) A directional antenna (at least 15 decibel front-to-back ratio); and

(2) No more transmitter power than determined by a *control station power test* (a test to determine the appropriate transmitter power (see Appendix A)).

(c) Where these rules use the term *large urban area,* it means a circular region extending out 121 kilometers (75 miles) in all directions around the geographic center of certain cities.

(d) The large urban areas and their geographic centers are shown in Appendix B.

e) Control stations and fixed sta-
ns authorized before October 16,
3 located beyond 121 kilometers (75
es) of the geographic center of ur-
ized areas of 200,000 or more popu-
on as defined in the U.S. Census of
ulation, 1960, Vol. 1, table 23, page
are not subject to the restrictions
his rule section.

49 Considerations near large urban areas.

) A fixed station at a point near a
e urban area must have:

) A directional antenna (at least 15
bel front-to-back ratio); and

) No more than 15 watts transmit-
ower output.

) Where these rules use the term
a large urban area, it means the
on within a circular band around a
e urban area. The band is 40 kilo-
ers (25 miles) wide. It begins at the
of the large urban area, and ex-
s out 161 kilometers (100 miles)
nd the geographic center of the

Fixed stations authorized before
ber 16, 1983 located beyond 161
meters (100 miles) of the geo-
hic center of urbanized areas of
00 or more population as defined
e U.S. Census of Population, 1960,
1, table 23, page 50, are not sub-
to the restrictions of this rule sec-

1 Antenna height.

A land station *antenna* (the land
on's radiating structure (for trans-
ng, receiving or both), including
ower, mast or pole supporting it
everything attached to the struc-
must not be a hazard to aircraft.
licensee of a GMRS system must
FCC permission (see § 95.83)
e the uppermost tip of an anten-
ay be higher than normally al-
l in paragraphs (b), (c) and (d) of
ection.

Regardless of any other require-
of this section, an antenna may
s be at least:

6.1 meters (20 feet) above the
d or above the building or tree
which the antenna is mounted;

(2) Equal to the height of an existing antenna to which the land station antenna is attached.

(c) The antenna may be as high as 61 meters (200 feet) above the ground, unless it will be within 6.1 kilometers (20,000 feet) of an airport or heliport.

(d) If the antenna is near an airport or heliport listed in the FAA's (Federal Aviation Administration's) Airport Facilities Directory, or near an airport or heliport operated by the Department of Defense, it must not be higher than:

(1) One meter higher than the airport elevation for every 100 meters from the nearest runway if the runway is longer than one kilometer (3,281 feet), and is within 6.1 kilometers (20,000 feet) of the antenna; or

(2) Two meters higher than the airport elevation for every 100 meters from the nearest runway if the runway is no longer than one kilometer (3,281 feet) and is within 3.1 kilometers (10,000 feet) of the antenna; or

(3) Four meters higher than the heliport elevation for every 100 meters from the nearest landing pad if the pad is within 1.5 kilometers (5,000 feet) of the antenna.

(e) If the FCC grants permission to put an antenna higher than normally allowed in paragraphs (b), (c) and (d) of this section, the licensee may have to mark the antenna with bright paint and light it up at night (see part 17 of the FCC Rules).

(f) The antenna for a small base stations or for a small control station must not be more than 6.1 meters (20 feet) above the ground or above the building or tree on which it is mounted.

[48 FR 35237, Aug. 3, 1983, as amended at 53 FR 47715, Nov. 25, 1988]

§ 95.53 Mobile station communication points.

(a) A mobile station unit may transmit communications directly to:

(1) Other mobile station units in the same GMRS system;

(2) Mobile station units in any other GMRS system;

(3) A base station in the same GMRS system; and

(4) A base station in any other GMRS system;

(b) A mobile station unit may transmit communications through a mobile relay station in the same GMRS system to:

(1) Other mobile station units in the same GMRS system;

(2) Control stations in the same GMRS system; and

(3) Mobile station units in any other GMRS system.

(c) A mobile station unit authorized to transmit on a channel assigned to a mobile relay station in another GMRS system may transmit communications through that mobile relay station to:

(1) Mobile station units in the other GMRS system; and

(2) Control stations in the other GMRS system.

(d) A mobile station unit in a GMRS system licensed to an individual authorized to transmit on a channel assigned to a mobile relay station in another GMRS systgem may transmit communications through that mobile relay station with the permission of the licensee of the other GMRS system to:

(1) Other mobile station units in the same GMRS system; and

(2) Mobile station units in another GMRS system having permission to transmit communications through the mobile relay station.

(e) A mobile station unit must not transmit communications to:

(1) Any fixed station;

(2) Any control station, directly;

(3) Any station in the Amateur Radio Service;

(4) Any unauthorized station; or

(5) Any foreign station.

(f) A mobile station unit must not transmit communications through a mobile relay station in another GMRS system, for retransmission to:

(1) Other mobile station units in its own GMRS system, unless:

(i) The mobile station units are in a GMRS system licensed to an individual; and

(ii) The licensee of the other GMRS system has given permission to use the mobile relay station for this purpose.

(2) A control station in its own GMRS system; or

(3) Any station in any GMRS system other than the system which includes the mobile relay station.

(g) A mobile station unit may transmit communications as a radio control link (see § 95.127) to a remotely controlled station.

[48 FR 35237, Aug. 3, 1983, as amended at 53 FR 47715, Nov. 25, 1988]

§ 95.55 Base station communication points.

(a) A base station may transmit communications directly to:

(1) Mobile station units in the same GMRS system;

(2) Mobile station units in any other GMRS system; and

(3) Paging receivers in the same GMRS system.

(b) A base station must not transmit communications to:

(1) Any mobile relay station;

(2) Any base station;

(3) Any paging receiver not in the same GMRS system;

(4) Any fixed station;

(5) Any control station;

(6) Any station in the Amateur Radio Service;

(7) Any unauthorized station; or

(8) Any foreign station.

§ 95.57 Mobile relay station communication points.

(a) A mobile relay station in a GMRS system may *automatically* (without immediate thought or action by the station operator) retransmit communications between:

(1) A mobile station unit in the same GMRS system and:

(i) Another mobile station unit in the same GMRS system; or

(ii) A control station in the same GMRS system.

(2) A mobile station unit in any other GMRS system and:

(i) Another mobile station unit in the same GMRS system as the mobile relay station; or

(ii) A control station in the same GMRS system as the mobile relay station.

(b) A mobile relay station in a GMRS system must not automatically retransmit communications between:

A mobile station unit in any
GMRS system *and* another unit
e same mobile station, unless:
The other GMRS system is li-
d to an individual; and
The licensee of the GMRS
n with the mobile relay station
iven permission to use the mobile
station for this purpose;
Any control station *and* any
control station;
Any other mobile relay station
ny station;
ny base station *and* any station;

Any fixed station *and* any sta-

35237, Aug. 3, 1983, as amended at 53
16, Nov. 25, 1988]

**Control station communication
nts.**

control station may transmit
nications as a radio control link
5.127) to a remotely controlled

control station may transmit
nications through a mobile
ation to:
obile station units in the same
system as the control station;

obile station units in any other
system.
control station must not trans-
munications to any other sta-

**Fixed station communication
s.**

fixed station may transmit
ications from the point au-
for it on the license to an-
ed station in the same GMRS
t the point authorized for it
cense.
ixed station must not transmit
ications to any other station.

YING FOR A GMRS SYSTEM LICENSE

pplying for a new or modified li-

individual applies for a li-
a new GMRS system by fill-
an application form and at-
ll additional information re-
n individual applies to modify a license for an existing GMRS system using the same form and in the same manner as applying for a new GMRS system. Individuals should submit their applications, together with the filing fee, to the Federal Communications Commission, General Mobile Service, P.O. Box 360373M, Pittsburgh, PA 15251-6373.

(b) An applicant for a General Mobile Radio Service system license, sharing a multiply-licensed mobile relay station, may operate the system for a period of 180 days, under a Temporary Permit, evidenced by a properly-executed certification made on FCC Form 574-T, after mailing FCC Form 574 to the Commission.

(c) The application will be returned to the applicant if it is defective. An application is *defective* if:

(1) The form is not completely filled out;

(2) All necessary additional information is not included; or

(3) All necessary certifications have not been made (see, e.g., § 95.75 (g)(2), (o) and (p)).

(d) The Commission may, without a hearing, grant an application in part or subject to terms or conditions or with privileges other than those requested. Such an action is presumed to be a grant of the application unless the applicant files a written rejection of the grant as made within 30 days from the date of the grant or the effective date of the grant, whichever is later. If the Commission receives rejection of such a grant, the Commission will vacate its original action and will set the application for hearing.

(e) A non-individual may not obtain a new GMRS system license. A non-individual that held a GMRS system license issued before July 31, 1987, may not make the following major modifications:

(1) Change the area of operation of the GMRS system;

(2) Add any stations to the GMRS system;

(3) Increase the number of units of the mobile station;

(4) Change the location of any land station in the GMRS system;

(5) Add one or more channels or channel pairs and/or change the assigned channel(s) or channel pair(s);

(6) Increase the transmitter power of an station in the GMRS system; or

(7) Increase the height of a station antenna in the GMRS system.

(f) A GMRS system licensee may notify the FCC of a change of name or a change of mailing address by sending a letter to the Federal Communications Commission, Gettysburg, PA 17326. This does not, however, permit GMRS system license transferability (see § 95.109). Nor does this suffice for corporate transfer of control—the provisions of § 95.111 apply instead.

[43 FR 54791, Nov. 22, 1978, as amended at 52 FR 10232, Mar. 31, 1987; 53 FR 47716, Nov. 25, 1988; 53 FR 51625, Dec. 22, 1988]

§ 95.73 System licensing.

(a) Application for a license for a new GMRS system or application to modify a licensed GMRS system is made on Form 574. The applicant must follow the *Instructions for Completion of FCC Form 574* (available at FCC Field Offices).

(b) One set of forms must be used for each system the applicant wants the FCC to license.

(c) One form must be used to apply for the following stations in a GMRS system:

(1) The mobile station;

(2) All small base stations (see § 95.25(e));

(3) All small control stations (see § 95.25(d)); and

(4) All other land stations (at no more than 6 locations).

(d) An additional form must be used to apply for every six land stations in a GMRS system that cannot be listed in the preceding form.

(e) Form 574-T, Temporary Permit for a General Mobile Radio Service System, should be used if applicant is eligible and desires to operate the station pending the processing of the application. (See also § 95.71(b).)

[48 FR 35237, Aug. 3, 1983, as amended at 53 FR 47716, Nov. 25, 1988]

§ 95.75 Basic information.

The following information is required in all applications for a license for a new or modified GMRS system:

(a) Applicant's name (see § 95.5);

(b) Applicant's *mailing address* (an address in the United States where mail from the FCC can be received);

(c) Transmitting channel or channel pair requested (see § 95.29);

(d) Station class;

(e) Number of transmitter units in a mobile station (see § 95.23);

(f) Number of land stations in each class (see § 95.25);

(g) Transmitter power as follows:

(1) Transmitter output power in watts for all stations.

(2) Station ERP in watts for all stations other than mobile stations, small base stations and small control stations.

(h) Each land station point (except small base stations and small control stations):

(1) Latitude and longitude within one second; and

(2) Street address (if none, local directions to the station);

(i) Each control point for each remotely controlled land station (see § 95.127), including small base stations and small control stations:

(1) Street address (if none, local directions to the control point); or

(2) Call sign of any control station already licensed to the applicant for that point;

(j) Antenna height (see § 95.51) and antenna ground elevation for each land station, except for small base stations and small control stations;

(k) Communication services (see § 95.101(c)) the proposed GMRS system would provide to, or receive from, any other individual or entity;

(l) Age eligibility statement (where required—see § 95.5);

(m) Area of operation;

(n) *Emission designator.* In the GMRS, emission F3E will be considered to include use of a *selective calling tone, or a tone or digitally operated squelch* (a tone code used to address a particular station) in conjunction with voice communications;

(o) Foreign government certification, if applicable (see § 95.5);

(p) Frequency claim waiver certification, if applicable; and

(q) Applicant's signature (see § 95.87).

[48 FR 35237, Aug. 3, 1983, as amended at 49 FR 4003, Feb. 1, 1984; 53 FR 47716, Nov. 25, 1988]

§ 95.77 Additional information for GMRS systems with land stations at four or more locations.

(a) An application for a new or modified GMRS system having land stations (except for small control stations or small base stations) at 4 or more locations must include a *functional system diagram* (a drawing showing details of the GMRS system, including the points between which communications with other stations in the system will be exchanged.)

(b) [Reserved]

(c) A copy of the functional system diagram must be kept as part of the GMRS system records (§ 95.113).

[48 FR 35237, Aug. 3, 1983, as amended at 53 FR 47716, Nov. 25, 1988]

§ 95.79 Additional information for stations in the National Radio Quiet Zone.

An application for a license for a new or modified GMRS system having a land station at a point within the National Radio Quite Zone (see § 95.41) must:

(a) Send a notice to:

Director, National Radio Astronomy Observatory
P.O. Box 2
Green Bank, WV 24944

(b) Provide the following details about the proposed station in the notice:

(1) Antenna point (latitude and longitude);

(2) Antenna height;

(3) Antenna directivity;

(4) Transmitting channel(s);

(5) Emission; and

(6) Transmitter output.

(c) Include in the application to the FCC the date the notice was sent to the Observatory.

§ 95.83 Additional information for stations with antennas higher than normally allowed.

(a) An applicant for a license for a new or modified GMRS system seeking permission to have a land station antenna higher than normally allowed (see § 95.51) must:

(1) Request (on FCC Form 574) an antenna height greater than normally allowed; and

(2) Notify the Federal Aviation Administration (on FAA Form 7460-1) that the antenna would be higher than normally allowed.

(b) Each base station and each control station with an antenna height greater than 6.1 meters (20 feet) must be separately identified on Form 574 (see §§ 95.25 (d) and (e) and 95.51(f)).

[48 FR 35237, Aug. 3, 1983, as amended at 53 FR 47716, Nov. 25, 1988]

§ 95.85 Additional information for stations near United States borders.

For a new or modified GMRS system having a land station at a point north of line A, east of line C, or at any point close to any United States border where interference to a station in another country could occur, an applicant may include additional data on FCC Form 574-B if the land station:

(a) Does not have vertical polarization;

(b) Does not have an omnidirectional azimuth;

(c) Has an associated control station with other than a directional antenna having its azimuth of maximum radiation directed towards the land station;

(d) Has an associated control station with other than 20 degrees beamwidth; or

(e) Is part of a GMRS system that includes stations or units intended for communication with stations or units in other GMRS systems or in other radio services.

Provision of this information will enable the Commission to seek greater interference protection for the station from foreign stations.

[49 FR 4003, Feb. 1, 1984]

§ 95.87 Signature.

(a) If the applicant is an individual, he/she must sign the application.

(b) If the applicant is any other entity, the following individual must sign the application:

If the entity is:	The individual who signs is:
(1) A partnership	A partner;
(2) A corporation	An officer, director or employee;
(3) An association	An officer;
(4) A governmental unit	An official.

§ 95.89 Renewing a license.

(a) The licensee of a GMRS system may apply to the FCC to renew the license for another term (see § 95.105) by filling out FCC Form 574-R (or FCC Form 405-A when the licensee has not gotten FCC Form 574-R within 30 days of the expiration of the license) and sending it to: Federal Communications Commission, 574R Land Mobile Renewal, P.O. Box 360559M, Pittsburgh, PA 15251-6559 (unless the licensee is a governmental entity, in which case the renewal application should be sent to Federal Communications Commission, Gettysburg, PA 17326).

(b) If the renewal application is sent to the FCC before the existing license term expires, the renewal application is timely filed. Except for GMRS systems whose licenses may not be renewed (see § 95.89 (c)(3) and (d)), stations in a GMRS system whose application is timely filed may continue to transmit under the expired license until the FCC acts on the renewal application. A copy of the renewal application sent to the FCC must be kept in the GMRS system records (see § 95.113) until the renewed license, or notification of other FCC action, is received.

(c) A GMRS system licensed to a non-individual before July 31, 1987, is eligible to renew that license and all subsequent licenses based upon it if:

(1) The non-individual is:

(i) A partnership, and each partner is 18 years of age or older;

(ii) A corporation;

(iii) An association;

(iv) A state, territorial or local government unit; or

(v) Other legal entity;

(2) The non-individual is not:

(i) A foreign government;

(ii) A representative of a foreign government; or

(iii) A federal government agency; and

(3) The licensee has not been granted any of the modifications to its GMRS system license specified in § 95.71(e).

(d) A GMRS system licensed to a non-individual on or after July 31, 1987, may not be renewed.

(e) If a GMRS system license is allowed to expire, the former licensee may file an application to reinstate the expired license within six months after the expiration date. The application to reinstate must be accompanied by a renewal application. An expired GMRS system license for which a timely renewal application has not been filed is not valid. No station of such a GMRS system may transmit until the licensee has received a new GMRS system license based on the late-filed renewal application.

[53 FR 47716, Nov. 25, 1988]

MANAGING A GMRS SYSTEM

§ 95.101 What the license authorizes.

(a) A license authorizes the licensee to manage the GMRS system only as:

(1) The Rules require;

(2) The license specifies;

(3) Proposed by the entity in the license application; and

(4) Shown on the functional system diagram (where applicable).

(b) The license does not authorize operation as a common carrier or communication of messages for pay.

(c) If the licensee is a corporation and the license so indicates, it may use its GMRS system to furnish nonprofit radio communication service to its parent corporation, to another subsidiary of the same parent, or to its own subsidiary. Such use is not subject to the cooperative use provisions of § 95.33.

§ 95.103 Licensee duties.

(a) The licensee is responsible for the proper operation of the GMRS system at all times.

(b) The licensee must have access to the station equipment and be able to disable it. A licensee using multiple licensed transmitting equipment may satisfy this requirement by entering an arrangement with other licensees using the same equipment to select one of their number to have primary access responsibility.

(c) When the information about the licensee stated on the license changes, the licensee must take the following step(s):

(1) The licensee must notify the FCC in writing in the event of a name or mailing address change (see § 95.117(b)). The notice must show the name and mailing address as they appear on the license, the station call sign(s), and the new name or new mailing address. A copy of the notice must be kept as part of the GMRS system records (see § 95.113). (FCC Forms 405-A or 574-R may be used for this purpose.)

(2) If the status of a non-individual GMRS system licensee changes (for example, when a corporation is dissolved and a new corporation stands in its place, or a partnership becomes a corporation), the licensee must send the license to the FCC for cancellation (see § 95.117(b)).

The former licensee may not operate until the FCC has aproved a license for the system in the name of the new entity.

[48 FR 35237, Aug. 3, 1983, as amended at 53 FR 47717, Nov. 25, 1988]

§ 95.105 License term.

A license for a GMRS system is usually issued for a 5-year term. (FCC prints the expiration date on the license.)

§ 95.107 Keeping the license.

(a) The licensee must keep the license document until:

(1) The license expires; or

(2) The license is terminated by the FCC; or

(3) The licensee obtains a different license for the GMRS system.

(b) The license must be kept as part of the GMRS system records (see § 95.113).

(c) The license may be photocopied for any lawful purpose.

(d) If the license is lost, the licensee must request a duplicate document from the FCC (see § 95.117(b)(3)).

(e) If the license is no longer desired, it must be sent to the FCC (see § 95.117(b)(6)) with a written request that it be cancelled. (Forms 405-A or 574-R may be used for this purpose.)

§ 95.109 License not transferable.

(a) The licensee must not transfer, assign, sell or give the license for a GMRS system to any other entity except in accordance with the provisions of § 95.111.

(b) If the licensee sells or gives away the GMRS system equipment, the new owner must obtain a new license before using it (see § 95.71), unless the new owner intends to use the equipment with an already licensed GMRS system.

§ 95.111 Transfer of control of a corporation.

If the licensee of a GMRS system is a corporation, and there is a change in the control of the corporation, the licensee must request consent for the change of control from the FCC on Form 703 (see § 95.117(b)(5)). The FCC document granting such consent must be kept as part of the GMRS system records (see § 95.113).

§ 95.113 System records.

(a) The licensee must keep records for the GMRS system for the license term (see § 95.105), except that the licensee need not keep authorizations which have expired.

(b) GMRS *system records* include the following documents (where applicable):

(1) The license (see § 95.107);

(2) [Reserved]

(3) Copies of letters from the licensee to the FCC concerning name or mailing address changes (see § 95.103);

(4) Copies of answers to discrepancy notices;

(5) An STA or waiver of these rules;

(6) A copy of any renewal application submitted to the FCC and not yet acted upon (see § 95.89(b));

(7) A copy of the measurements and calculations (see Appendix A) made during a control station power test (see § 95.47);

(8) A copy of a functional system diagram (see § 95.77);

(9) A copy of the agreement under which any station in the GMRS

system is cooperatively shared (see § 95.33);

(10) A copy of the FCC consent to a licensee corporation's change in its corporate control (see § 95.111); and

(11) A temporary permit.

[48 FR 35237, Aug. 3, 1983, as amended at 53 FR 47717, Nov. 25, 1988]

§ 95.115 Station inspection.

If an authorized FCC representative requests to inspect any station in a GMRS system, the licensee or station operator must make the station available. If an authorized FCC representative requests to inspect the GMRS system records (see § 95.113), the licensee must make them available.

§ 95.117 Where to contact the FCC.

(a) Write to:

The nearest FCC Field Office

(1) For application forms (see §§ 95.73 and 95.87);

(2) For instruction forms (see § 95.73);

(3) To complain about interference; or

(4) To find out if the FCC has type-accepted a certain transmitter for use in the GMRS (see § 95.129).

(b) Write to:

Federal Communications Commission
Attention: GMRS
Gettysburg, PA 17326

(1) To ask a question about an application or about these Rules;

(2) [Reserved]

(3) To request a duplicate license (see § 95.107);

(4) To notify the FCC of a new name or mailing address (see § 95.103);

(5) To request consent to the change in the control of a licensee corporation (see § 95.111);

(6) To return a license to the FCC for cancellation (see §§ 95.103 and 95.107); or

(7) To file a request for an STA or waiver of these rules.

(c) [Reserved]

[48 FR 35237, Aug. 3, 1983, as amended at 53 FR 47717, Nov. 25, 1988]

§ 95.119 Station identification.

(a) Except as provided in paragraph (e) of this section, every station in a GMRS system and every mobile station unit must transmit a station iden tification:

(1) Following the transmission communications or a series of commu nications; and

(2) Every 15 minutes during a lon transmission.

(b) The station identification is th call sign assigned to:

(1) The GMRS system; or

(2) The station in the GMRS system transmitting communications.

(c) A unit number may be include after the call sign in the identification

(d) The station identification mus be clearly transmitted in:

(1) Voice in the English language, with each letter and digit separately and distinctly transmitted (letters may be said using a phonetic alphabet); or

(2) International Morse code telegraphy with a keyed tone (400 to 2,000 Hertz) between 8.34 and 20.85 baud (ten to twenty-five words per minute). The transmitted frequency deviation must be between 1,500 and 2,500 Hertz. Should delayed or periodic activation of automatic Morse code identification equipment interrupt the communications of another co-channel licensee, the Commission may require the use of equipment which will inhibit automatic station identification when co-channel communications are in progress.

(e) A station need not identify its transmissions if it automatically retransmits communications from another station which are properly identified.

§ 95.121 Transmitting channel.

Each station in a GMRS system must transmit only on the channel(s) or channel pair(s) (see §§ 95.7 and 95.29) printed on the license for that station, or authorized by these Rules for use by that station (see § 95.29 (e) and (f)).

[53 FR 47717, Nov. 25, 1988]

§ 95.123 Sharing a station or sharing equipment.

Every station in a GMRS system which is cooperatively shared (see § 95.33) must be managed by the licensee in accordance with the written agreement and in accordance with the provisions of § 95.33. Licensees sharing multiply licensed equipment must do so in accordance with the provisions of § 95.35.

§ 95.125 Station control point.

(a) Each station in a GMRS system must have a *control point* (where the station operator can perform the required duties (see § 95.173)).

(b) The control point for each station must be at that station, unless the license authorizes the station to be controlled from a remote point.

§ 95.127 Controlling a station from a remote point.

(a) A station operator in a GMRS system may control the station from a remote point through a *control link* (a connection between the remote control point and the remotely controlled station). The control link must be either:

(1) A wireline control link solely for purposes of transmitter control (see § 95.181(i)(13)); or

(2) A radio control link.

(b) The remotely controlled station must not make unauthorized transmissions.

(c) The station operator must perform the required duties (see § 95.173) when controlling the station from a remote point the same as when controlling it locally at the station point. Should the control link fail to function so that the station operator cannot perform the required duties, the remotely controlled station must not transmit.

(d) The FCC does not consider a station in a GMRS system as being remotely controlled if the connection is a wireline or mechanical control link, and the station and its control point are both:

(1) On the same vehicle; or

(2) At the same street address, or within 152 meters (500 feet) of each other.

(e) Any device used to establish a wireline control link which is attached to the public switched telephone network after April 1, 1976 must be registered with the FCC and must comply with the standards incorporated in a registration program to protect the public switched telephone network from harm (see Part 68 of the FCC Rules).

§ 95.129 Station equipment.

(a) Every station in a GMRS system must use transmitters the FCC has type-accepted for use in the GMRS. Write to any FCC Field Office to find out if a particular transmitter has been type-accepted for the GMRS. All station equipment in a GMRS system must comply with the technical rules in Part 95, Subpart E of these rules.

(b) No transmitter may be used at a station in a GMRS system which:

(1) Is not FCC type-accepted for use in the GMRS;

(2) Has been internally modified to make it different from the FCC type-accepted model (see § 95.133); or

(3) [Reserved]

(c) A land station in a GMRS system must use a directional antenna if it is a:

(1) Control station at a point within a large urban area (see § 95.47); or

(2) Fixed station at a point near a large urban area (see § 95.49).

(d) Every small base station and every small control station must use an antenna no more than 6.1 meters (20 feet) high (see § 95.25 (d) and (e)).

(Secs. 4(i) and 303(r), Communications Act of 1934, as amended, 47 U.S.C. 154(i) and 303(r), and sec. 553 of the Administrative Procedures Act, 5 U.S.C. 553)

[48 FR 35237, Aug. 3, 1983, as amended at 49 FR 20672, May 16, 1984; 53 FR 47717, Nov. 25, 1988]

§ 95.131 Servicing station transmitters.

(a) The GMRS system licensee shall be responsible for the proper operation of all stations in the GMRS system at all times and is expected to provide for observations, servicing and maintenance as often as may be necessary to ensure proper operation.

(b) Except as provided in paragraph (c) of this section, test signals during internal adjustments to a station transmitter must be made using a nonradiating simulated antenna.

(c) Brief test signals using a radiating antenna may be transmitted to adjust the antenna to the station transmitter or to detect or measure spurious radiation. These test transmissions must not be longer than one minute during any five-minute period. These test transmissions shall not interfere with communications already in progress on the operating frequency, and shall be properly identified as required, but may be otherwise unmodulated as appropriate.

(Secs. 4(i) and 303(r), Communications Act of 1934, as amended, 47 U.S.C. 154(i) and 303(r), and sec. 553 of the Administrative Procedures Act, 5 U.S.C. 553)

[48 FR 35237, Aug. 3, 1983, as amended at 49 FR 20672, May 16, 1984; 53 FR 47717, Nov. 25, 1988]

§ 95.133 Modification to station transmitters.

(a) No internal changes may be made in a transmitter used in a station in a GMRS system to make the transmitter different from the FCC type-accepted model (see § 95.129).

(b) One FCC type-accepted model may be converted to another FCC type-accepted model if the conversion is done:

(1) By the original manufacturer of the transmitter.

(2) In accordance with the original manufacturer's instructions.

(Secs. 4(i) and 303(r), Communications Act of 1934, as amended, 47 U.S.C. 154(i) and 303(r), and sec. 553 of the Administrative Procedures Act, 5 U.S.C. 553)

[48 FR 35237, Aug. 3, 1983, as amended at 49 FR 20672, May 16, 1984; 53 FR 47717, Nov. 25, 1988]

§ 95.135 Maximum authorized transmitting power.

(a) No station may transmit with more than 50 watts output power.

(b) A control station at a point within a large urban area must not transmit with more output power than the licensee determines by a test (see § 95.47 and Appendix A). The licensee must keep a copy of the measurements and calculations made during this test as part of the GMRS system records (see § 95.113).

(c) A small control station at a point north of Line A or east of Line C must transmit with no more than 5 watts ERP.

(d) A fixed station at a point near a large urban area must transmit with no more than 15 watts output pow
(see § 95.49).

(e) A small base station must tran
mit with no more than 5 watts ERP.

[48 FR 35237, Aug. 3, 1983, as amended at
FR 47717, Nov. 25, 1988]

§ 95.137 Moving a small base station or small control station.

(a) A small base station (s
§ 95.25(e)) or a small control statio
(see § 95.25(d)) in a GMRS syste
may be moved from the point specifi
on the license to any other poi
where radio services are regulated
the FCC.

(b) The licensee must file an applic
tion to modify the GMRS system (s
§ 95.71) to show the new point with
30 days after the small base station
the small control station is moved.

[53 FR 47717, Nov. 25, 1988]

§ 95.139 Adding a small base station or small control station.

(a) Except for a GMRS system
censed to a non-individual, one
more small base stations or a sma
control station may be added to
GMRS system at any point whe
radio services are regulated by th
FCC.

(b) The licensee must file an applic
tion to modify the GMRS system (s
§ 95.71) within 30 days after eac
small base station or small control st
tion is added.

(c) Non-individual licensees may n
add any small base station or sma
control stations to their GMRS sy
tems.

[53 FR 47717, Nov. 25, 1988]

§ 95.141 Interconnection prohibited.

No station in a GMRS system ma
be interconnected to the publ
switched telephone network except
and in accordance with the require
ments and restrictions applied to
wireline control link (see § 95.127).

[53 FR 47717, Nov. 25, 1988]

§ 95.143 Managing a GMRS system in

emergency.

(a) The stations in a GMRS syste
must cease transmitting when the st

tion operator of any station on the same channel is communicating an *emergency message* (concerning the immediate protection of property or the safety of someone's life).

(b) If necessary to communicate an emergency message from a station in a GMRS system, the licensee may permit:

(1) Anyone to be the station operator (see § 95.179); and

(2) The station operator to communicate the emergency message to any radio station.

OPERATING A GMRS STATION

§ 95.171 Station operator at control point.

When a station in a GMRS system is transmitting, it must have a station operator. The station operator must be at the control point (see § 95.125) for that station. The same person may be the operator for more than one station at the same time.

§ 95.173 Station operator duties.

The *station operator:*

(a) Communicates messages (see § 95.181);

(b) *Controls* the station by:

(1) Causing it to transmit and to cease transmitting;

(2) Taking all necessary and reasonable precautions to assure that unauthorized or improper operations do not occur;

(3) Refraining from making any transmissions that may have the reasonably anticipated effect of causing improper operation of others' equipment; and

(4) In cases of recurrent interference, obeying any Commission-imposed additional requirements or restrictions.

§ 95.175 Cooperation in sharing channels.

The station operator must cooperate in *sharing* each channel with station operators of other stations by:

(a) Monitoring the channel before initiating transmissions;

(b) Waiting until ongoing communications are completed before initiating transmissions;

(c) Engaging in only permissible communications (see § 95.181); and

(d) Limiting transmissions to the minimum practicable transmission time.

[48 FR 35237, Aug. 3, 1983, as amended at 53 FR 47717, Nov. 25, 1988]

§ 95.177 Responsibility for station operator's communications.

The licensee is responsible for all communications made by station operators in the GMRS system. (The licensee should be certain every station operator understands and complies with these Rules.)

§ 95.179 Individuals who may be station operators.

(a) An individual GMRS system licensee may permit his/her immediate family members living in the same household to be station operators in his/her GMRS system. They may communicate messages about the licensee's personal activities and about the licensee's business activities. *Immediate family members* are the:

(1) Licensee;

(2) Licensee's spouse;

(3) Licensee's children, grandchildren, stepchildren;

(4) Licensee's parents, grandparents, stepparents;

(5) Licensee's brothers, sisters;

(6) Licensee's aunts, uncles, nieces, nephews; and

(7) Licensee's in-laws.

(b) In a GMRS system licensed to a non-individual, eligible station operators are limited to the persons listed in paragraph (b)(1) of this section with the conditions listed in paragraph (b)(2) of this section as follows:

(1) Only the following persons may be permitted to operate under the authority of a GMRS system licensed to a non-individual:

If the GMRS system licensee is—	These persons may be station operators—
(i) A partnership	Licensee's partners and employees.
(ii) A corporation	Licensee's officers, directors, members and employees.
(iii) An association	Licensee's members and employees.
(iv) A governmental unit	Licensee's employees.

(2) These persons may only communicate messages about the licensee's business activities. Employees of the licensee may communicate messages while acting within the scope of their employment, and only about the licensee's business activities.

(c) The licensee may permit a telephone answering service employee to be a station operator if:

(1) That employee only communicates messages received for the licensee to the licensee;

(2) The station equipment at the telephone answering point is not shared in any other GMRS system; and

(3) The station at the telephone answering service point is not interconnected to the public switched telephone network.

(d) The station operator of a GMRS system licensed to an individual may be a station operator in any other GMRS system if he/she has permission from the licensee of the other GMRS system.

(e) The provisions of § 95.33 regarding cooperative use do not apply to or govern the authority of a GMRS licensee to designate station operators in accordance with the provisions of this section.

(f) Except for emergency communications (see § 95.143), only persons specified in paragraphs (a) through (d) may be GMRS station operators.

[48 FR 35237, Aug. 3, 1983, as amended at 53 FR 47717, Nov. 25, 1988; 53 FR 51625, Dec. 22, 1988]

§ 95.181 Permissible communications.

(a) A station operator for an individual who is licensed in the GMRS (other than an employee of that individual) may communicate two-way voice messages concerning the licensee's personal or business activities (see § 95.179).

(b) An employee of an individual who is licensed in the GMRS may, as a station operator, communicate two-way voice messages while acting within the scope of his/her employment.

(c) A station operator for any entity other than an individual licensed in the GMRS may communicate two-way voice messages concerning the licensee's business activities (see § 95.179) An employee for an entity other than an individual licensed in the GMRS may, as a station operator, communicate two-way voice messages while acting within the scope of his/her employment.

(d) A station operator for any GMRS licensee may communicate two-way voice messages concerning:

(1) Emergencies (see § 95.143);

(2) Rendering assistance to a motorist; and

(3) Civil defense drills, if the responsible agency requests assistance.

(e) All messages must be in *plain language* (without codes or hidden meanings). They may be in a foreign language, except for call signs (see § 95.119).

(f) A station operator may communicate tone messages for purposes of identification or transmitter control in a control link (see § 95.127). (The FCC treats a control tone as voice in this case.)

(g) A station operator may communicate a selective calling tone or tone operated squelch only in conjunction with a voice communication. If the tone is *subaudible* (300 Hertz or less) it may be communicated during the entire voice message. If the tone is *audible* (more than 300 Hertz) it may be communicated for no more than 15 seconds at a time.

(h) A station operator may communicate a one-way voice page to a paging receiver. A selective calling tone or tone operated squelch may be used in conjunction with a voice page, as prescribed in paragraph (g) of this section. A station operator may not communicate a *tone-only page* (tones communicated in order to find, summon or notify someone).

(i) A station operator must not communicate:

(1) Messages for hire, whether the remuneration received is direct or indirect;

(2) Messages in connection with any activity which is against Federal, State or local law;

(3) False or deceptive messages;

(4) Coded messages or messages with hidden meanings ("10-codes" are permitted);

(5) Intentional interference;

(6) Music, whistling, sound effects or material to amuse or entertain;

(7) Sounds only to attract attention;

(8) Obscene, profane or indecent words, language or meaning;

(9) Advertisements or offers for the sale of goods or services;

(10) Advertisements for a political candidate or political campaign (messages about the campaign business may be communicated);

(11) International distress signals, such as the word "Mayday" (except when on a ship, aircraft or other vehicle in immediate danger to ask for help);

(12) Programs (live or delayed) intended for radio or television station broadcast (messages about news items or program preparation may be communicated);

(13) Messages which are both conveyed by a wireline control link and transmitted by a GMRS station (see § 95.127);

(14) Messages (except emergency messages) to any station in the Amateur Radio Service, to any unauthorized station, or to any foreign station;

(15) Continuous or uninterrupted transmissions, except for communications involving the immediate safety of life or property; or

(16) Messages for public address systems.

(j) A station operator in a GMRS system licensed to a telephone answering service must not transmit any communications to customers of the telephone answering service.

[48 FR 35237, Aug. 3, 1983, as amended at 49 FR 4003, Feb. 1, 1984]

APPENDIX A TO PART 95—MAKING A CONTROL STATION POWER TEST

(a) A unit of the mobile station is brought to the control station *or* to a point within 402 meters (¼ mile) of the control station.

(b) The strength of the signal received at the terminals of the feedline to the antenna of the remotely controlled station produced by transmissions of the unit of your mobile station must be measured.

(c) The directional antenna of the control station must be aimed so that transmissions from it produce the greatest signal strength at the terminals of the feedline to the antenna of the remotely controlled station.

(d) The transmitter output power of the control station must be adjusted (see § 95.135) so that the signal strength produced at the terminals of the feedline to the antenna of the remotely controlled station is no more than 6 decibels more than that produced by the unit of the mobile station. The maximum transmitter output power permitted any GMRS station must not be exceeded (see § 95.141).

(e) A record must be made of each control station power test and kept as part of the GMRS system records.

[48 FR 35237, Aug. 3, 1983, as amended at 49 FR 4003, Feb. 1, 1984]

APPENDIX B TO PART 95—WHERE THE LARGE URBAN AREAS ARE LOCATED

City	North Latitude	West Longitude
	° ′ ″	° ′ ″
Akron, OH	41 05 00	81 30 44
Albany-Schenectady-Troy, NY	42 39 01	73 45 01
Albuquerque, NM	35 05 01	106 39 05
Allentown-Bethlehem-Easton, PA-NJ	40 36 11	75 28 06
Ann Arbor, MI	42 16 59	83 44 52
Atlanta, GA	33 45 10	84 23 37
Augusta, GA-SC	33 28 20	81 58 00
Austin, TX	30 16 09	97 44 37
Bakersfield, CA	35 22 31	119 01 16
Baltimore, MD	39 17 26	76 36 45
Baton Rouge, LA	30 26 58	91 11 00
Birmingham, AL	33 31 01	86 48 36
Boston, MA	42 21 24	71 03 25
Bridgeport, CT	41 10 49	73 11 22
Buffalo, NY	42 52 52	78 52 21
Canton, OH	40 47 50	81 22 37
Charleston, SC	32 46 35	79 55 53
Charlotte, NC	35 13 44	80 50 45
Chattanooga, TN-GA	35 02 41	85 18 32
Chicago, IL-Northwestern IN	41 52 28	87 38 22
Cincinnati, OH-KY	39 06 07	84 30 35
Cleveland, OH	41 29 51	81 41 50
Colorado Springs, CO	38 50 07	104 49 16
Columbia, SC	34 00 02	81 02 00
Columbus, GA-Ala	32 28 07	84 59 24
Columbus, OH	39 57 47	83 00 17
Corpus Christi, TX	27 47 51	97 23 45
Dallas-Fort Worth, TX	32 47 09	96 47 37
Davenport-Rock Island-Moline, IA-IL	41 31 00	90 35 00
Dayton, OH	39 45 32	84 11 43
Denver, CO	39 44 58	104 59 22
Des Moines, IA	41 35 14	93 37 00
Detroit, MI	42 19 48	83 02 57
El Paso, TX	31 45 36	106 29 11
Fayetteville, NC	35 03 00	78 53 00
Flint, MI	43 00 50	83 41 33
Fort Lauderdale-Hollywood, FL	26 07 00	80 09 00
Fort Wayne, IN	41 04 21	85 08 26
Fresno, CA	36 44 12	119 47 11
Grand Rapids, MI	42 58 03	85 40 13
Greenville, SC	34 50 50	82 24 01
Harrisburg, PA	40 15 43	76 52 59
Hartford, CT	41 46 12	72 40 49
Honolulu, HI	21 19 00	157 52 00

City	North Latitude	West Longitude
	° ′ ″	° ′ ″
Houston, TX	29 45 26	95 21 37
Indianapolis, IN	39 46 07	86 09 46
Jackson, MS	32 17 56	90 11 06
Jacksonville, FL	30 19 44	81 39 42
Kansas City, MO-KS	39 04 56	94 35 20
Knoxville, TN	35 57 39	83 55 07
Lansing, MI	42 44 01	84 33 15
Las Vegas, NV	36 10 20	115 08 37
Lawrence-Haverhill, MA-NH	42 42 16	71 10 08
Little Rock-North Little Rock, AR	34 44 42	92 16 37
Lorain-Elyria, OH	41 28 00	82 11 00
Los Angeles-Long Beach, CA	34 03 15	118 14 28
Louisville, KY-IN	38 14 47	85 45 49
Madison, WI	43 04 23	89 22 55
Melbourne-Cocoa, FL	28 05 00	80 36 00
Memphis, TN-AR-MS	35 08 46	90 03 13
Miami, FL	25 46 37	80 11 32
Milwaukee, WI	43 02 19	87 54 15
Minneapolis-St. Paul, MN	44 58 57	93 15 43
Mobile, AL	30 41 36	88 02 33
Nashville-Davidson, TN	36 09 33	86 46 55
New Haven, CT	41 18 25	72 55 30
New Orleans, LA	29 56 53	90 04 10
Newport News-Hampton, VA	36 59 30	76 26 00
New York, NY-Northeastern NJ	40 45 06	73 59 39
Norfolk-Portsmouth, VA	36 51 10	76 17 21
Ogden, UT	41 13 31	111 58 21
Oklahoma City, OK	35 28 26	97 31 04
Omaha, NE-IA	41 15 42	95 56 14
Orlando, FL	28 32 42	81 22 38
Oxnard-Ventura-Thousand Oaks, CA	34 12 00	119 11 00
Pensacola, FL	30 24 51	87 12 56
Peoria, IL	40 41 42	89 35 33
Philadelphia, PA-NJ	39 56 58	75 09 21
Phoenix, AZ	33 27 12	112 04 28
Pittsburgh, PA	40 26 19	80 00 00
Portland, OR-WA	45 31 06	122 40 35
Providence-Pawtucket-Warwick, RI-MA	41 49 32	71 24 41
Raleigh, NC	35 46 38	78 38 21
Richmond, VA	37 32 15	77 26 09
Rochester, NY	43 09 41	77 36 21
Rockford, IL	42 16 07	89 05 48
Sacramento, CA	38 34 57	121 29 41
St. Louis, MO-IL	38 37 45	90 12 22
St. Petersburg, FL	27 46 18	82 38 19
Salt Lake City, UT	40 45 23	111 53 26
San Antonio, TX	29 25 37	98 29 06
San Bernardino-Riverside, CA	34 06 30	117 17 28
San Diego, CA	32 42 53	117 09 21
San Francisco-Oakland, CA	37 46 39	122 24 40
San Jose, CA	37 20 16	121 53 24
Sarasota-Bradenton, FL	27 20 05	82 32 20
Scranton-Wilkes-Barre, PA	41 24 32	75 39 46
Seattle-Everett, WA	47 36 32	122 20 12
Shreveport, LA	32 30 46	93 44 58
South Bend, IN-MI	41 40 33	86 15 01
Spokane, WA	47 39 32	117 25 33
Springfield-Chicopee-Holyoke, MA-CT	42 06 21	72 35 32
Syracuse, NY	43 03 04	76 09 14
Tacoma, WA	47 14 59	122 26 15
Tampa, FL	27 56 58	82 27 25
Toledo, OH-MI	41 39 14	83 32 39
Trenton, NJ-PA	40 13 30	74 45 00
Tucson, AZ	32 13 15	110 58 08
Tulsa, OK	36 09 12	95 59 34
Washington, DC-MD-VA	38 53 51	77 00 33
West Palm Beach, FL	26 42 36	80 03 07
Wichita, KS	37 41 30	97 20 16
Wilmington, DE-NJ-MD	39 44 46	75 32 51
Worcester, MA	42 15 37	71 48 17
Youngstown-Warren, OH	41 05 57	80 39 02
San Juan, PR	18 28 00	66 07 00

NOTE 1: This appendix lists the urbanized areas of 200,000 or more people as shown in the Bureau of Census News Release of July 27, 1981: "Provisional Population of Urbanized Areas, 1980." The geographical coordinates given are from the Department of Commerce publication of 1947: "Air-Line Distances Between Cities in the United States" and from data supplied by the National Geodetic Survey. The coordinates are determined by using the first city mentioned in the urbanized area as the center of the urbanized area.

Subpart B—[Reserved]

Subpart C—Radio Control (R/C) Radio Service

SOURCE: 48 FR 24890, June 3, 1983, unless otherwise noted.

GENERAL PROVISIONS

§ 95.201 (R/C Rule 1) What is the Radio Control (R/C) Radio Service?

The R/C Service is a private, one-way, short distance non-voice communications service for the operation of devices at remote locations.

§ 95.202 (R/C Rule 2) How do I use these rules?

(a) You must comply with rules (see R/C Rule 18, § 95.218, for the penalties for violations) when you operate a station in the R/C service from:

(1) Within or over the territorial limits of places where radio services are regulated by the FCC (see R/C Rule 5, § 95.205);

(2) Aboard any vessel or aircraft registered in the United States; or

(3) Aboard any unregistered vessel or aircraft owned or operated by a United States citizen or company.

(b) Your R/C station must comply with technical rules found in Subpart E of Part 95.

(c) Where the rules use the word "you", "you" means a person operating an R/C station.

l) Where the rules use the word
rson," the rules are concerned with
ndividual, a corporation, a partner-
, an association, a joint stock com-
y, a trust, a state, territorial or
l government unit, or other legal
ty.

) Where the rules use the term
C," that means the Federal Com-
ications Commission.

) Where the rules use the term
C station," that means a radio sta-
transmitting in the R/C Radio
ice.

**203 (R/C Rule 3) Am I eligible to op-
erate an R/C station?**

ou are authorized to operate an R/
ation unless:

) You are a foreign government, a
esentative of a foreign govern-
t, or a federal government agency;

) The FCC has issued a cease and
t order to you, and the order is
in effect.

04 (R/C Rule 4) Do I need a license?

u do not need an individual li-
e to operate an R/C station. You
uthorized by this rule to operate
R/C station in accordance with
ules in this subpart.

**05 (R/C Rule 5) Where may I oper-
te my R/C station?**

u are authorized to operate your
station from:

Within or over any area of the
l where radio services are regulat-
the FCC. Those areas are within
erritorial limits of:

The fifty United States
The District of Columbia

Caribbean Insular areas

Commonwealth of Puerto Rico
Navassa Island
United States Virgin Islands (50
and cays)

Pacific Insular areas

American Samoa (seven islands)
Baker Island
Commonwealth of Northern
ana Islands
Guam Island
) Howland Island

(11) Jarvis Island

(12) Johnston Island (Islets East, Johnston, North and Sand)

(13) Kingman Reef

(14) Midway Island (Islets Eastern and Sand)

(15) Palmyra Island (more than 50 islets)

(16) Wake Island (Islets Peale, Wake and Wilkes)

(b) Any other area of the world, except within the territorial limits of areas where radio services are regulated by—

(1) An agency of the United States other than the FCC. (You are subject to its rules.)

(2) Any foreign government. (You are subject to its rules.)

(c) An aircraft or ship, with the permission of the captain, within or over any area of the world where radio services are regulated by the FCC or upon or over international waters. You must operate your R/C station according to any applicable treaty to which the United States is a party.

§ 95.206 (R/C Rule 6) Are there any special restrictions on the location of my R/C station?

(a) If your R/C station is located on premises controlled by the Department of Defense, you may be required to comply with additional regulations imposed by the commanding officer of the installation.

(b) If your R/C station will be constructed on an environmental sensitive site, or will be operated in such a manner as to raise environmental problems, under § 1.1307 of this chapter, you must provide an environmental assessment, as set forth in § 1.1311 of this chapter, and undergo environmental review § 1.1312 of this chapter, before commencement of construction.

[48 FR 24890, June 3, 1983, as amended at 55 FR 20398, May 16, 1990]

HOW TO OPERATE AN R/C STATION

§ 95.207 (R/C Rule 7) On what channels may I operate?

(a) Your R/C station may transmit only on the following channels (frequencies):

(1) The following channels may be used to operate any kind of device (any object or apparatus, except an R/C transmitter), including a model aircraft device (any small imitation of an aircraft) or a model surface craft device (any small imitation of a boat, car or vehicle for carrying people or objects, except aircraft): 26.995, 27.045, 27.095, 27.145, 27.195 and 27.255 MHz.

(2) The following channels may only be used to operate a model aircraft device: 72.01, 72.03, 72.05, 72.07, 72.09, 72.11, 72.13, 72.15, 72.17, 72.19, 72.21, 72.23, 72.25, 72.27, 72.29, 72.31, 72.33, 72.35, 72.37, 72.39, 72.41, 72.43, 72.45, 72.47, 72.49, 72.51, 72.53, 72.55, 72.57, 72.59, 72.61, 72.63, 72.65, 72.67, 72.69, 72.71, 72.73, 72.75, 72.77, 72.79, 72.81, 72.83, 72.85, 72.87, 72.89, 72.91, 79.93, 72.95, 72.97 and 72.99 MHz.

(3) The following channels may only be used to operate a model surface craft devices: 75.41, 75.43, 75.45, 75.47, 75.49, 75.51, 75.53, 75.55, 75.57, 75.59, 75.61, 75.63, 75.65, 75.67, 75.69, 75.71, 75.73, 75.75, 75.77, 75.79, 75.81, 75.83, 75.85, 75.87, 75.89, 75.91, 75.93, 75.95, 75.97 and 75.99 MHz.

(4) Channels 72.16, 72.32 and 72.96 MHz may also be used to operate a model aircraft device or a model surface craft device until December 20, 1987.

(5) Channels 72.08, 72.24, 72.40 and 75.64 MHz may also be used to operate a model aircraft device until December 20, 1987.

(b) You must share the channels with other R/C stations. You must cooperate in the selection and use of the channels. You must share the Channel 27.255 MHz with stations in other radio services. There is no protection from interference on any of these channels.

(c) Your R/C station may not transmit simultaneously on more than one channel in the 72-76 MHz band when your operation would cause harmful interference to the operation of other R/C stations.

(d) Your R/C station must stop transmitting if it interferes with:

(1) Authorized radio operations in the 72-76 MHz band; or

(2) Television reception on TV Channels 4 or 5.

(e) [Reserved]

(f) Stations in the 26-27 MHz range are not afforded any protection from interference caused by the operation of industrial, scientific of medical devices. Such stations also operate on a shared basis with other stations in the Personal Radio Services.

(g) Stations in the 72-76 MHz range are subject to the condition that inteference will not be caused to the remote control of industrial equipment operating on the same or adjacent frequencies or to the reception of television transmissions on Channels 4 and 5. These frequencies are not afforded any protection from interference due to the operation of fixed and mobile stations in other services assigned to the same or adjacent frequencies.

[48 FR 24890, June 3, 1983. Designated from 49 FR 6098, Feb. 17, 1984, and amended at 50 FR 37857, Sept. 18, 1985; 52 FR 16263, May 4, 1987]

§ 95.208 (R/C Rule 8) How high may I put my antenna?

(a) *Antenna* means the radiating system (for transmitting, receiving or both) and the structure holding it up (tower, pole or mast). It also means everything else attached to the radiating system and the structure.

(b) If your antenna is mounted on a hand-held portable unit, none of the following limitations apply.

(c) If your antenna is installed at a fixed location, it (whether receiving, transmitting or both) must comply with either one of the following:

(1) The highest point must not be more than 6.10 meters (20 feet) higher than the highest point of the building or tree on which it is mounted; or

(2) The highest point must not be more than 18.3 meters (60 feet) above the ground.

(d) If your R/C station is located near an airport, and if you antenna structure is more than 6.1 meters (20 feet) high, your may have to obey additional restrictions. The highest point of your antenna must not exceed one meter above the airport elevation for every hundred meters of distance from the nearest point of the nearest airport runway. Differences in ground elevation between your antenna and the airport runway may complicate this formula. If your R/C station is near an airport, you may contact the nearest FCC field office for a worksheet to help you figure the maximum allowable height of your antenna. Consult part 17 of the FCC's Rules for more information.

WARNING: Installation and removal of R/C station antennas near powerlines is dangerous. For your safety, follow the installation directions included with your antenna.

[48 FR 24890, June 3, 1983, as amended at 48 FR 41416, Sept. 15, 1983]

§ 95.209 (R/C Rule 9) What equipment may I use at my R/C station?

(a) Your R/C station may transmit only with:

(1) An FCC type accepted (or type approved) R/C transmitter (Type accepted means the FCC has determined that certain radio equipment is capable of meeting recommended standards for operation); or

(2) A non-type accepted R/C transmitter on Channels 26.995-27.255 MHz f it complies with the technical standrds (see part 95, subpart E).

(3) Use of a transmitter outside of he band 26.995–27.255 MHz which is ot type accepted (or type approved) oids your authority to operate the tation. Use of a transmitter in the and 26.995–27.255 MHz which does ot comply with the technical standrds voids your authority to operate he station.

(b) You may examine a list of type xcepted transmitters at any FCC field ffice.

(c) Your R/C station may transmit ith a transmitter assembled from a t.

(d) You must not make, or have ade, any internal modification to a pe-accepted transmitter. (See R/C Rule 22.) Any internal modification to a type-accepted transmitter cancels the type-acceptance, and use of such a transmitter voids your authority to operate the station.

§ 95.210 (R/C Rule 10) How much power may I use?

(a) Your R/C station transmitter power output must not exceed the following value under any conditions:

Channel	Transmitter power (carrier power) (watts)
27.255 MHz	25
26.995–27.195 MHz	4
72–76 MHz	0.75

(b) Use of a transmitter which has power output in excess of that authorized voids your authority to operate the station.

§ 95.211 (R/C Rule 11) What communications may be transmitted?

(a) You may only use your R/C station to transmit one-way communications. (One-way communications are transmissions which are not intended to establish communications with another station.)

(b) You may only use your R/C station for the following purposes:

(1) The operator turns on and/or off a device at a remote location (Refer to Diagram 1); or

(2) A sensor at a remote location turns on and/or off an indicating device for the operator. (Refer to Diagram 2.) Only Channels 26.995 to 27.255 MHz (see R/C Rule 17, § 95.217) may be used for this purpose. (A remote location means a place distant from the operator.)

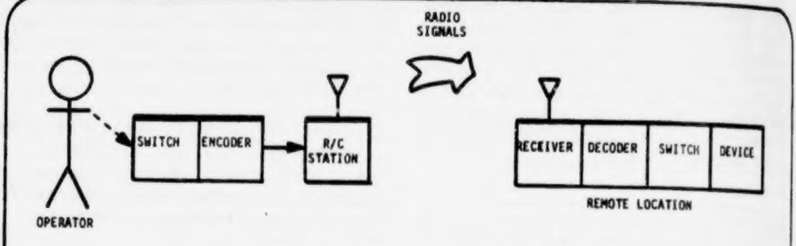
RADIO SIGNALS
OPERATOR
SWITCH
ENCODER
R/C STATION
RECEIVER
DECODER
SWITCH
DEVICE
REMOTE LOCATION

Diagram 1 (Refer to R/C Rule 11(b)(1))

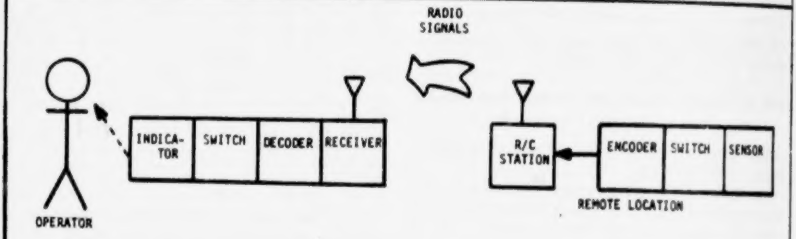
RADIO SIGNALS
OPERATOR
INDICATOR
SWITCH
DECODER
RECEIVER
R/C STATION
ENCODER
SWITCH
SENSOR
REMOTE LOCATION

Diagram 2 (Refer to R/C Rule 11(b)(2))

(c) Your R/C station may transmit any appropriate non-voice emission.

[48 FR 24890, June 3, 1983, as amended at 50 FR 37857, Sept. 18, 1985]

§ 95.212 (R/C Rule 12) What communications are prohibited?

You must not use an R/C station—

(a) In connection with any activity which is against federal, state or local law;

(b) To transmit any message other than for operation of devices at remote locations (no voice, telegraphy, etc.);

(c) To intentionally interfere with another station's transmissions;

(d) To operate another R/C transmitter by remote control (See R/C Rule 17, § 95.217); or

(e) To transmit two-way communications.

(f) To transmit data. Tone or other signal encoding, however, is not considered to be data when only used either for the purpose of identifying the specific device among multiple devices that the operator intends to turn on/off, or the specific sensor among multiple sensors intended to turn on/off indicating device for the operator.

[48 FR 24890, June 3, 1983, as amended at 54 FR 8336, Feb. 28, 1989; 54 FR 20476, May 11, 1989]

§ 95.213 (R/C Rule 13) May I be paid to use my R/C station?

(a) You may not accept direct or indirect payment for transmitting with an R/C station.

(b) You may use an R/C station to help you provide a service, and be paid for that service, as long as you are paid only for the service and not for the actual use of the R/C station.

**.214 (R/C Rule 14) Who is responsible
for R/C communications I make?**

'ou are responsible for all communi-
ions which are made by you from
R/C station.

**.215 (R/C Rule 15) Do I have to limit
the length of my communications?**

) You must limit your R/C com-
nications to the minimum practical
e.

) The only time your R/C commu-
tions may be a continuous signal
more than 3 minutes is when oper-
n of the device requires at least
or more changes during each
ute of the communications.

) Your R/C station may transmit a
inuous signal without modulation
if:

) You are using it to operate a
el aircraft device; and

The presence or absence of the
l operates the device.

If you show that you need a con-
ous signal to insure the immediate
y of life of property, the FCC
make an exception to the limita-
in this rule.

**16 (R/C Rule 16) Do I identify my
/C communications?**

u need not identify your R/C
nunications.

**17 (R/C Rule 17) May I operate my
/C station transmitter by remote con-
ol?**

You may not operate an R/C
mitter by radio remote control.
R/C Rule 12, § 95.212.)

You may operate an R/C trans-
r by wireline remote control if
btain specific approval in writing
the FCC. To obtain FCC approv-
u must show why you need to op-
your station by wireline remote
ol. Send your request and justifi-
to FCC, Gettysburg, Pa. 17325.
receive FCC approval, you must
the approval as part of your sta-
records. (See R/C Rule 24,
24.)

Remote control means operation
R/C transmitter from any place
than the location of the R/C
nitter. Direct mechanical control
ect electrical control by wire
some point on the same premises, craft or vehicles as the R/C transmitter is not considered remote control.

OTHER THINGS YOU NEED TO KNOW

§ 95.218 (R/C Rule 18) What are the penalties for violating these rules?

(a) If the FCC finds that you have willfully or repeatedly violated the Communications Act or the FCC Rules, you may have to pay as much as $2,000 for each violation, up to a total of $5,000. (See section 503(b) of the Communications Act.)

(b) If the FCC finds that you have violated any section of the Communications Act or the FCC Rules, you may be ordered to stop whatever action caused the violation. (See section 312(b) of the Communications Act.)

(c) If a federal court finds that you have willfully and knowingly violated any FCC Rule, you may be fined up to $500 for each day you committed the violation. (See section 502 of the Communications Act.)

(d) If a Federal court finds that you have willfully and knowingly violated any provision of the Communications Act, you may be fined up to $10,000, or you may be imprisoned for one year, or both. (See section 501 of the Communications Act.)

§ 95.219 (R/C Rule 19) How do I answer correspondence from the FCC?

(a) If it appears to the FCC that you have violated the Communications Act or FCC rules, the FCC may send you a discrepancy notice.

(b) Within the time period stated in the notice, you must answer with:

(1) A complete written statement about the apparent discrepancy;

(2) A complete written statement about any action you have taken to correct the apparent violation and to prevent it from happening again; and

(3) The name of the person operating at the time of the apparent violation.

(c) If the FCC send you a letter asking you questions about your R/C radio station or its operation, you must answer each of the questions with a complete written statement within the time period stated in the letter.

(d) You must not shorten your answer by references to other communications or notices.

(e) You must send your answer to the FCC office which sent you the notice.

(f) You must keep a copy of your answer in your station records (see R/C Rule 24, § 95.224).

§ 95.220 (R/C Rules 20) What must I do if the FCC tells me that my R/C station is causing interference?

(a) If the FCC tells you that your R/C station is causing interference for technical reasons, you must follow all instructions in the official FCC notice. (This notice may require you to have technical adjustments made to your equipment.)

(b) You must comply with any restricted hours of R/C station operation which may be included in the official FCC notice.

§ 95.221 (R/C Rule 21) How do I have my R/C transmitter serviced?

(a) You may adjust an antenna to your R/C transmitter and you may make radio checks. (A radio check means a one-way transmission for a short time in order to test the transmitter.)

(b) You are responsible for the proper operation of the station at all times and are expected to provide for observations, servicing and maintenance as often as may be necessary to ensure proper operation. Each internal repair and each internal adjustment to an FCC type accepted R/C transmitter (see R/C Rule 9) must be made in accord with the Technical Regulations (see subpart E). The internal repairs or internal adjustments should be performed by or under the immediate supervision and responsibility of a person certified as technically qualified to perform transmitter maintenance and repair duties in the private land mobile services and fixed services by an organization or committee representative of users in those services.

(c) Except as provided in paragraph (d) of this section, each internal repair and each internal adjustment of an R/C transmitter in which signals are transmitted must be made using a nonradiating ("dummy") antenna.

(d) Brief test signals (signals not longer than one minute during any five minute period) using a radiating antenna may be transmitted in order to:

(1) Adjust a transmitter to an antenna;

(2) Detect or measure radiation of energy other than the intended signal; or

(3) Tune a receiver to your R/C transmitter.

(Secs. 4(i) and 303(r), Communications Act of 1934, as amended, 47 U.S.C. 154(i) and 303(r), and sec. 553 of the Administrative Procedures Act, 5 U.S.C. 553)

[48 FR 24890, June 3, 1983, as amended a 49 FR 20673, May 16, 1984]

§ 95.222 (R/C Rule 22) May I make any changes to my R/C station transmitter?

(a) You must not make or have anyone else make an internal modification to your R/C transmitter.

(b) Internal modification does not include:

(1) Repair or servicing of an R/C station transmitter (see R/C Rule 21, § 95.221); or

(2) Changing plug-in modules which were type-accepted as part of your R/C transmitter.

(c) You must not operate an R/C transmitter which has been modified by anyone in any way, including modification to operate on unauthorized frequencies or with illegal power. (See R/C Rules 9 and 10, §§ 95.209 and 95.210.)

§ 95.223 (R/C Rule 23) Do I have to make my R/C station available for inspection?

(a) If an authorized FCC representative requests to inspect your R/C station, you must make your R/C station and records available for inspection.

(b) An R/C station includes all of the radio equipment you use.

§ 95.224 (R/C Rule 24) What are my station records?

Your station records include the following documents, as applicable:

a) A copy of each response to an C violation notice or an FCC letter. e R/C Rule 19, § 95.219.)

b) Each written permission received m the FCC. (See R/C Rule 17.)

.225 (R/C Rule 25) How do I contact the FCC?

a) Write to your nearest FCC Field ice if you:

1) Want to report an interference nplaint; or

2) Want to know if the FCC has e-accepted a transmitter for R/C.

b) Write to the FCC, Private Radio reau, Personal Radio Branch, shington, DC 20554 if you have stions about the R/C Rules.

FR 24890, June 3, 1983, as amended at R 41416, Sept. 15, 1983]

part D—Citizens Band (CB) Radio Service

URCE: 48 FR 24894, June 3, 1983, unless rwise noted.

GENERAL PROVISIONS

401 (CB Rule 1) What is the Citizens Band (CB) Radio Service?

e CB Radio Service is a private, way, short-distance voice commu tions service for personal or busi activities. The CB Radio Service also be used for voice paging.

402 (CB Rule 2) How do I use these ules?

You must comply with these (See CB Rule 21 § 95.421, for the lties for violations) when you op a station in the CB Service from:

Within or over the territorial s of places where radio services regulated by the FCC (see CB 5, § 95.405);

Aboard any vessel or aircraft reg d in the United States; or

Aboard any unregistered vessel ircraft owned or operated by a d States citizen or company.

Your CB station must comply technical rules found in subpart art 95.

Where the rules use the word , "you" means a person operat CB station.

(d) Where the rules use the word "person," the rules are concerned with an individual, a corporation, a partnership, an association, a joint stock company, a trust, a state, territorial or local government unit, or other legal entity.

(e) Where the rules use the term "FCC", that means the Federal Communications Commission.

(f) Where the rules use the term "CB station", that means a radio station transmitting in the CB Radio Service.

§ 95.403 (CB Rule 3) Am I eligible to operate a CB station?

You are authorized to operate a CB station unless:

(a) You are a foreign government, a representative of a foreign government, or a federal government agency; or

(b) The FCC has issued a cease and desist order to you, and the order is still in effect.

§ 95.404 (CB Rule 4) Do I need a license?

You do not need an individual license to operate a CB station. You are authorized by this rule to operate your CB station in accordance with the rules in this subpart.

§ 95.405 (CB Rule 5) Where may I operate my CB station?

You are authorized to operate your CB station from:

(a) Within or over any area of the world where radio services are regulated by the FCC. Those areas are within the territorial limits of:

(1) The fifty United States.

(2) The District of Columbia.

Caribbean Insular areas

(3) Commonwealth of Puerto Rico.

(4) Navassa Island.

(5) United States Virgin Islands (50 islets and cays).

Pacific Insular areas

(6) American Samoa (seven islands).

(7) Baker Island.

(8) Commonwealth of Northern Mariana Islands.

(9) Guam Island.

(10) Howland Island.

(11) Jarvis Island.

(12) Johnston Island (Islets East, Johnston, North and Sand).

(13) Kingman Reef.

(14) Midway Island (Islets Eastern and Sand).

(15) Palmyra Island (more than 50 islets).

(16) Wake Island (Islets Peale, Wake and Wilkes).

(b) Any other area of the world, except within the territorial limits of areas where radio services are regulated by—

(1) An agency of the United States other than the FCC. (You are subject to its rules.)

(2) Any foreign government. (You are subject to its rules.)

(c) An aircraft or ship, with the permission of the captain, within or over any area of the world where radio services are regulated by the FCC or upon or over international waters. You must operate your CB station according to any applicable treaty to which the United States is a party.

§ 95.406 (CB Rule 6) Are there any special restrictions on the location of my CB station?

(a) If your CB station is located on premises controlled by the Department of Defense you may be required to comply with additional regulations imposed by the commanding officer of the installation.

(b) If your C/B station will be constructed on an environmentally sensitive site, or will be operated in such a manner as to raise environmental problems, under § 1.1307 of this chapter, you must provide an environmental assessment, as set forth in § 1.1311 of this chapter, and undergo the environmental review, § 1.1312 of this chapter, before commencement of construction.

[48 FR 24894, June 3, 1983, as amended at 55 FR 20398, May 16, 1990]

HOW TO OPERATE A CB STATION

§ 95.407 (CB Rule 7) On what channels may I operate?

(a) Your CB station may transmit only on the following channels (frequencies):

Channel	Frequency (megahertz—MHz)
1	26.965
2	26.975
3	26.985
4	27.005
5	27.015
6	27.025
7	27.035
8	27.055
9	[1] 27.065
10	27.075
11	27.085
12	27.105
13	27.115
14	27.125
15	27.135
16	27.155
17	27.165
18	27.175
19	27.185
20	27.205
21	27.215
22	27.225
23	27.255
24	27.235
25	27.245
26	27.265
27	27.275
28	27.285
29	27.295
30	27.305
31	27.315
32	27.325
33	27.335
34	27.345
35	27.355
36	27.365
37	27.375
38	27.385
39	27.395
40	27.405

[1] See paragraph (b) of this section.

(b) Channel 9 may be used only for emergency communications or for traveler assistance.

(c) You must, at all times and on all channels, give priority to emergency communication messages concerning the immediate safety of life or the immediate protection of property.

(d) You may use any channel for emergency communications or for traveler assistance.

(e) You must share each channel with other users.

(f) The FCC will not assign any channel for the private or exclusive use of any particular CB station or group of stations.

(g) The FCC will not assign any channel for the private of exclusive use of CB stations transmitting single sideband or AM.

§ 95.408 (CB Rule 8) How high may I put my antenna?

(a) *Antenna* means the radiating system (for transmitting, receiving or both) and the structure holding it up (tower, pole or mast). It also means everything else attached to the radiating system and the structure.

(b) If your antenna is mounted on a hand-held portable unit, none of the following limitations apply.

(c) If your antenna is installed at a fixed location, it (whether receiving, transmitting or both) must comply with either one of the following:

(1) The highest point must not be more than 6.10 meters (20 feet) higher than the highest point of the building or tree on which it is mounted; or

(2) The highest point must not be more than 18.3 meters (60 feet) above the ground.

(d) If your CB station is located near an airport, and if you antenna structure is more than 6.1 meters (20 feet) high, you may have to obey additional restrictions. The highest point of your antenna must not exceed one meter above the airport elevation for every hundred meters of distance from the nearest point of the nearest airport unway. Differences in ground eleva- ion between your antenna and the irport runway may complicate this ormula. If your CB station is near an irport, you may contact the nearest CC field office for a worksheet to elp you figure the maximum allowble height of your antenna. Consult art 17 of the FCC's Rules for more formation.

ARNING: Installation and removal of CB tion antennas near powerlines is danger- s. For your safety, follow the installation ections included with your antenna.

FR 24894, June 3, 1983, as amended at FR 41416, Sept. 15, 1983]

.409 (CB Rule 9) What equipment may I use at my CB station?

) You must use an FCC type-ac- ted CB transmitter at your CB station. You can identify an FCC type-accepted transmitter by the type-acceptance label placed on it by the manufacturer. You may examine a list of type-accepted equipment at any FCC Field Office or at FCC Headquarters. Use of a transmitter which is not FCC type-accepted voids your authority to operate the station.

(b) You must not make, or have made, any internal modification to a type-accepted CB transmitter. (See CB Rule 25, § 95.425). Any internal modification to a type-accepted CB transmitter cancels the type-acceptance, and use of such a transmitter voids your authority to operate the station.

§ 95.410 (CB Rule 10) How much power may I use?

(a) Your CB station transmitter power output must not exceed the following values under any conditions:

AM (A3)—4 watts (carrier power) SSB—12 watts (peak envelope power)

(b) If you need more information about the power rule, see the technical rules in subpart E of part 95.

(c) Use of a transmitter which has carrier or peak envelope power in excess of that authorized voids your authority to operate the station.

§ 95.411 (CB Rule 11) May I use power amplifiers?

(a) You may not attach the following items (power amplifiers) to your type-accepted CB transmitter in any way:

(1) External radio frequency (RF) power amplifiers (sometimes called linears or linear amplifiers); or

(2) Any other devices which, when used with a radio transmitter as a signal source, are capable of amplifying the signal.

(b) There are no exceptions to this rule and use of a power amplifier voids your authority to operate the station.

(c) The FCC will presume you have used a linear or other external RF power amplifier if—

(1) It is in your possession or on your premises; and

(2) There is other evidence that you have operated your CB station with more power than allowed by CB Rule 10, § 95.410.

(d) Paragraph (c) of this section does not apply if you hold a license in another radio service which allows you to operate an external RF power amplifier.

§ 95.412 (CB Rule 12) What communications may be transmitted?

(a) You may use your CB station to transmit two-way plain language communications. Two-way plain language communications are communications without codes or coded messages. Operating signals such as "ten codes" are not considered codes or coded messages. You may transmit two-way plain language communications only to other CB stations, to units of your own CB station or to authorized government stations on CB frequencies about—

(1) Your personal or business activities or those of members of your immediate family living in your household;

(2) Emergencies (see CB Rule 18, § 95.418);

(3) Traveler assistance (see CB Rule 18, § 95.418); or

(4) Civil defense activities in connection with official tests or drills conducted by, or actual emergencies announced by, the civil defense agency with authority over the area in which your station is located.

(b) You may use your CB station to transmit a tone signal only when the signal is used to make contact or to continue communications. (Examples of circuits using these signals are tone operated squelch and selective calling circuits.) If the signal is an audible tone, it must last no longer than 15 seconds at one time. If the signal is a subaudible tone, it may be transmitted continuously only as long as you are talking.

(c) You may use your CB station to transmit one-way communications (messages which are not intended to establish communications between two or more particular CB stations) only for emergency communications, traveler assistance, brief tests (radio checks) or voice paging.

§ 95.413 (CB Rule 13) What communications are prohibited?

(a) You must not use a CB station—

(1) In connection with any activity which is against federal, state or local law;

(2) To transmit obscence, indecent or profane words, language or meaning;

(3) To interfere intentionally with the communications of another CB station;

(4) To transmit one-way communications, except for emergency communications, traveler assistance, brief tests (radio checks), or voice paging;

(5) To advertise or solicit the sale of any goods or services;

(6) To transmit music, whistling, sound effects or any material to amuse or entertain;

(7) To transmit any sound effect solely to attract attention;

(8) To transmit the word "MAYDAY" or any other international distress signal, except when your station is located in a ship, aircraft or other vehicle which is threatened by grave and imminent danger and your are requesting immediate assistance;

(9) To communicate with, or attempt to communicate with, any CB station more than 250 kilometers (155.3 miles) away;

(10) To advertise a political candidate or political campaign; (you may use your CB radio for the business or organizational aspects of a campaign, if you follow all other applicable rules);

(11) To communicate with stations in other countries, except General Radio Service stations in Canada; or

(12) To transmit a false or deceptive communication.

(b) You must not use a CB station to transmit communications for live or delayed rebroadcast on a radio or television broadcast station. You may use your CB station to gather news items or to prepare programs.

§ 95.414 (CB Rule 14) May I be paid to use my CB station?

(a) You may not accept direct or indirect payment for transmitting with a CB station.

(b) You may use a CB station to help you provide a service, and be paid for that service, as long as you are paid only for the service and not for the actual use of the CB station.

§ 95.415 (CB Rule 15) Who is responsible for communications I make?

You are responsible for all communications which are made by you from a CB station.

§ 95.416 (CB Rule 16) Do I have to limit the length of my communications?

(a) You must limit your CB communications to the minimum practical time.

(b) If you are communicating with another CB station or stations, you, and the stations communicating with you, must limit each of your conversations to no more than five continuous minutes.

(c) At the end of your conversation, you, and the stations communicating with you, must not transmit again for at least one minute.

§ 95.417 (CB Rule 17) Do I identify my CB communications?

(a) You need not identify your CB communications.

(b) [You are encouraged to identify your CB communications by any of the following means:

(1) Previously assigned CB call sign;

(2) K prefix followed by operator initials and residence zip code;

(3) Name; or

(4) Organizational description including name and any applicable operator unit number.]

(c) [You are encouraged to use your "handle" only in conjuction with the methods of identification listed in paragraph (b) of this section.]

§ 95.418 (CB Rule 18) How do I use my CB station in an emergency or to assist a traveler?

(a) You must at all times and on all channels, give priority to emergency communications.

(b) When you are directly participating in emergency communications, you do not have to comply with the rule about length of transmissions (CB Rule 16, § 95.416). You must obey all other rules.

(c) You may use your CB station for communications necessary to assist a traveler to reach a destination or to receive necessary services. When you are using your CB station to assist a traveler, you do not have to obey the rule about length of transmissions (CB Rule 16, § 95.416). You must obey all other rules.

§ 95.419 (CB Rule 19) May I operate my CB station transmitter by remote control?

(a) You may not operate a CB station transmitter by radio remote control.

(b) You may operate a CB transmitter by wireline remote control if you obtain specific approval in writing from the FCC. To obtain FCC approval, you must show why you need to operate your station by wireline remote control. Send your request and justification to FCC, Gettysburg, Pa. 17325. If you receive FCC approval, you must keep the approval as part of your station records. (See CB Rule 27, § 95.427.)

(c) Remote control means operation of a CB transmitter from any place other than the location of the CB transmitter. Direct mechanical control or direct electrical control by wire from some point on the same premises, craft or vehicle as the CB transmitter is not considered remote control.

§ 95.420 (CB Rule 20) May I connect my CB transmitter to a telephone?

(a) You may connect your CB station transmitter to a telephone if you comply with all of the following:

(1) You or someone else must be present at your CB station and must—

(i) Manually make the connection (the connection must not be made by remote control);

(ii) Supervise the operation of the transmitter during the connection;

(iii) Listen to each communication during the connection; and

(iv) Stop all communications if there are operations in violation of these rules.

(2) Each communication during the telephone connection must comply with all of these rules.

(3) You must obey any restriction that the telephone company places on

the connection of a CB transmitter to a telephone.

(b) The CB transmitter you connect to a telephone must not be shared with any other CB station.

(c) If you connect your CB transmitter to a telephone, you must use a phone patch device with has been registered with the FCC.

Other Things You Need To Know

§ 95.421 (CB Rule 21) What are the penalties for violating these rules?

(a) If the FCC finds that you have willfully or repeatedly violated the Communications Act or the FCC Rules, you may have to pay as much as $2,000 for each violation, up to a total of $5,000. (See section 503(b) of the Communications Act.)

(b) If the FCC finds that you have violated any section of the Communications Act or the FCC Rules, you may be ordered to stop whatever action caused the violation. (See section 312(b) of the Communications Act.)

(c) If a Federal court finds that you have willfully and knowingly violated any FCC Rule, you may be fined up to $500 for each day you committed the violation. (See section 502 of the Communications Act.)

(d) If a Federal court finds that you have willfully and knowingly violated any provision of the Communications Act, you may be fined up to $10,000 or you may be imprisoned for one year, or both. (See section 501 of the Communications Act.)

§ 95.422 (CB Rule 22) How do I answer correspondence from the FCC?

(a) If it appears to the FCC that you have violated the Communications Act or these rules, the FCC may send you a discrepancy notice.

(b) Within the time period stated in the notice, you must answer with:

(1) A complete written statement about the apparent discrepancy;

(2) A complete written statement about any action you have taken to correct the apparent violation and to prevent it from happening again; and

(3) The name of the person operating at the time of the apparent violation.

(c) If the FCC sends you a letter asking you questions about your CB radio station or its operation, you must answer each of the questions with a complete written statement within the time period stated in the letter.

(d) You must not shorten your answer by references to other communications or notices.

(e) You must send your answer to the FCC office which sent you the notice.

(f) You must keep a copy of your answer in your station records. (See CB Rule 27, § 95.427.)

§ 95.423 (CB Rule 23) What must I do if the FCC tells me that my CB station is causing interference?

(a) If the FCC tells you that your CB station is causing interference for technical reasons you must follow all instructions in the official FCC notice. (This notice may require you to have technical adjustments made to your equipment.)

(b) You must comply with any restricted hours of CB station operation which may be included in the official notice.

§ 95.424 (CB Rule 24) How do I have my CB station transmitter serviced?

(a) You may adjust an antenna to your CB transmitter and you may make radio checks. (A radio check means a one way transmission for a short time in order to test the transmitter.)

(b) You are responsible for the proper operation of the station at all times and are expected to provide for observations, servicing and maintenance as often as may be necessary to ensure proper operation. You must have all internal repairs or internal adjustments to your CB transmitter made in accordance with the Technical Regulations (see subpart E). The internal repairs or internal adjustments should be performed by or under the immediate supervision and responsibility of a person certified as technically qualified to perform transmitter maintenance and repair duties in the private land mobile services and fixed services by an organization or committee representative of users in those services.

(c) Except as provided in paragraph (d) of this section, each internal repair and each internal adjustment of a CB transmitter in which signals are transmitted must be made using a nonradiating ("dummy") antenna.

(d) Brief test signals (signals not longer than one minute during any five minute period) using a radiating antenna may be transmitted in order to:

(1) Adjust an antenna to a transmitter;

(2) Detect or measure radiation of energy other than the intended signal; or

(3) Tune a receiver to your CB transmitter.

Secs. 4(i) and 303(r), Communications Act of 1934, as amended, 47 U.S.C. 154(i) and 303(r), and sec. 553 of the Administrative Procedures Act, 5 U.S.C. 553)

48 FR 24894, June 3, 1983, as amended at 9 FR 20673, May 16, 1984]

95.425 (CB Rule 25) May I make any changes to my CB station transmitter?

(a) You must not make or have any ne else make any internal modifica- ion to your CB transmitter.

(b) Internal modification does not nclude:

(1) Repair or servicing of a CB sta- on transmitter (see CB Rule 24, 95.424); or

(2) Changing plug-in modules which ere type accepted as part of your CB ansmitter.

(c) You must not operate a CB trans- itter which has been modified by yone in any way, including modifi- ation to operate on unauthorized fre- uencies or with illegal power. (See CB ules 9 and 11, §§ 95.409 and 95.411.)

5.426 (CB Rule 26) Do I have to make my CB station available for inspection?

(a) If an authorized FCC representa- ve requests to inspect your CB sta- on, you must make your CB station d records available for inspection.

(b) A CB station includes all of the dio equipment you use.

§ 95.427 (CB Rule 27) What are my station records?

Your station records include the following documents, as applicable.

(a) A copy of each response to an FCC violation notice or an FCC letter. (See CB Rule 22, § 95.422.)

(b) Each written permission received from the FCC. (See CB Rule 19, § 95.419.)

§ 95.428 (CB Rule 28) How do I contact the FCC?

(a) Write to your nearest FCC Field Office if you:

(1) Want to report an interference complaint; or

(2) Want to know if the FCC has type-accepted a transmitter for CB.

(b) Write to the FCC, Private Radio Bureau, Personal Radio Branch, Washington, DC 20554 if you have questions about the CB Rules.

[48 FR 24894, June 3, 1983, as amended at 48 FR 41416, Sept. 15, 1983]

Subpart E—Technical Regulations

SOURCE: 53 FR 36789, Sept. 22, 1988, unless otherwise noted.

GENERAL PROVISIONS

§ 95.601 Basis and purpose.

These rules provide the technical standards to which each *transmitter* (apparatus that converts electrical energy received from a source into *RF* (radio frequency) energy capable of being radiated) used or intended to be used in a station authorized any of the the Personal Radio Services must comply. They also provide requirements for obtaining type acceptance of such transmitters. The Personal Radio Services are the *GMRS* (General Mobile Radio Service), the *R/C* (Radio Control Radio Service) and the *CB* (Citizens Band Radio Service). For operating rules, see part 95, subpart A—GMRS; subpart C—R/C; subpart D—CB.

§ 95.603 Type acceptance required.

(a) Each *GMRS transmitter* (a transmitter that operates or is intended to operate at a station authorized in the GMRS) must be type accepted.

(b) Each *R/C transmitter* (a transmitter that operates or is intended to operate at a station authorized in the R/C) must be type accepted, except one that transmits only in the 26-27 MHz frequency band and is *crystal controlled* (where the transmitted frequency is established by a *crystal* (a quartz piezo-electric element)).

(c) Each *CB transmitter* (a transmitter that operates or is intended to operate at a station authorized in the CB) must be type accepted. No CB transmitter type accepted pursuant to an application filed prior to September 10, 1976, shall be manufactured or marketed.

§ 95.605 Type acceptance procedure.

Any entity may request type acceptance for its transmitter in one of the Personal Radio Services, following the applicable type acceptance procedures in part 2 of this chapter.

§ 95.607 CB transmitter modification.

Only the holder of the grant of authorization of the particular type accepted CB transmitter may make the modifications permitted under the provisions for type acceptance (see part 2 of this Chapter.) No grantee shall make any of the following modifications to the transmitter without prior written permission from the *FCC* (Federal Communications Commission):

(a) The addition of any accessory or device not specified in the application for type acceptance and authorized by the FCC in granting the type acceptance;

(b) The addition of any switch, control or external connection;

(c) Any modification to provide for additional transmitting frequencies, increased modulation level, a different form of modulation, or increased *TP* (RF transmitter power expressed in *W* (watts), either *mean power* (TP averaged over at least 30 cycles of the lowest modulating frequency, typically 0.1 seconds at maximum power) or *peak envelope power* (TP averaged during 1 RF cycle at the highest crest of the modulation envelope), as measured at the transmitter output antenna terminals.)

TECHNICAL STANDARDS

§ 95.621 GMRS transmitter channel frequencies.

(a) The GMRS transmitter *channel frequencies* (reference frequencies from which the carrier frequency, suppressed or otherwise, may not deviate by more than the specified frequency tolerance) are 462.5500, 462.5625, 462.5750, 462.5875, 462.6000, 462.6125, 462.6250, 462.6375, 462.6500, 462.6625, 462.6750, 462.6875, 462.7000, 462.7125, 462.7250, 467.5500, 467.5750, 467.6000, 467.6250, 467.6500, 467.6750, 467.7000, and 467.7250.

NOTE: Certain GMRS transmitter channel frequencies are authorized only for certain station classes and station locations. See part 95, subpart A.

(b) Each GMRS transmitter for mobile station, small base station and control station operation must be maintained within a frequency tolerance of 0.0005%. Each GMRS transmitter for base station (except small base), mobile relay station or fixed station operation must be maintained within a frequency tolerance of 0.00025%.

[53 FR 47718, Nov. 25, 1988]

§ 95.623 R/C transmitter channel frequencies.

(a) The R/C transmitter channel frequencies are:

MHz	
26.995	72.33
27.045	72.35
27.095	72.37
27.145	72.39
27.195	72.41
27.255	72.43
72.01	72.45
72.03	72.47
72.05	72.49
72.07	72.51
72.09	72.53
72.11	72.55
72.13	72.57
72.15	72.59
72.17	72.61
72.19	72.63
72.21	72.65
72.23	72.67
72.25	72.69
72.27	72.71
72.29	72.73
72.31	72.75

75.59
75.61
75.63
75.65
75.67
75.69
75.71
75.73
75.75
75.77
75.79
75.81
75.83
75.85
75.87
75.89
75.91
75.93
75.95
75.97
75.99

Certain R/C transmitter channel es are authorized to operate only nds of devices (see part 95, subpart

h R/C transmitter that transhe 26-27 MHz frequency band ean TP of 2.5 W or less and ly by the operator to turn on ff a device at a remote locaer than a device used solely to ttention, must be maintained frequency tolerance of 0.01%. R/C transmitters must be ed within a frequency toler-005%.

789, Sept. 22, 1988; 53 FR 52713, 88]

B transmitter channel frequen-

CB transmitter channel frere:

Channel No.	(MHz)
	26.965
	26.975
	26.985
	27.005
	27.015
	27.025
	27.035
	27.055
	27.065
	27.075
	27.085
	27.105
	27.115
	27.125
	27.135
	27.155
	27.165
	27.175

Channel No.	(MHz)
19	27.185
20	27.205
21	27.215
22	27.225
23	27.255
24	27.235
25	27.245
26	27.265
27	27.275
28	27.285
29	27.295
30	27.305
31	27.315
32	27.325
33	27.335
34	27.345
35	27.355
36	27.365
37	27.375
38	27.385
39	27.395
40	27.405

(b) Each CB transmitter must be maintained within a frequency tolerance of 0.005%.

§ 95.627 Emission types.

(a) A GMRS transmitter must transmit only emission types A1D, F1D, G1D, H1D, J1D, R1D, A3E, F3E, G3E, H3E, J3E or R3E. A non-voice emission is limited to selective calling or tone-operated squelch tones to establish or continue voice communications. See § 95.181 (g) and (h).

(b) An R/C transmitter may transmit any appropriate non-voice emission which meets the emission limitations of § 95.631.

(c) A CB transmitter may transmit only emission types A1D, H1D, J1D, R1D, A3E, H3E, J3E, R3E. A non-voice emission is limited to selective calling or tone-operated squelch tones to establish or continue voice communications. See § 95.412 (b) and (c).

(d) No GMRS or CB transmitter shall employ a digital modulation or emission.

(e) No GMRS, CB or R/C transmitter shall transmit non-voice data.

§ 95.629 Emission bandwidth.

(a) The *authorized bandwidth* (maximum permissible bandwidth of a transmission) for emission type H1D, J1D, R1D, H3E, J3E or R3E is 4 kHz. The authorized bandwidth for emission type A1D or A3E is 8 kHz. The authorized bandwidth for emission type F1D, G1D, F3E or G3E is 20 kHz.

(b) The authorized bandwidth for any emission type transmitted by an R/C transmitter is 8 kHz.

§ 95.631 Unwanted radiation.

(a) In addition to the procedures in part 2, the following requirements apply to each transmitter both with and without the connection of all attachments acceptable for use with the transmitter, such as an external speaker, microphone, power cord, antenna, etc.

(b) The power of each unwanted emission shall be less than TP as specified in the applicable paragraph:

Transmitter	Emission type	Applicable paragraphs
GMRS	A1D, A3E, F1D, G1D, F3E, G3E with filtering.	(1), (3), (7)
	A1D, A3E, F1D, G1D, F3E, G3E without filtering.	(5), (6), (7)
	H1D, J1D, R1D, H3E, J3E, R3E	(2), (4), (7)
NOTE: *Filtering* refers to the requirement in § 95.633(b).		
R/C	As specified in § 95.627(b)	(1), (3), (7)
CB	A1D, A3E	(1), (3), (8), (9)
	H1D, J1D, R1D, H3E, J3E, R3E	(2), (4), (8), (9)
	A1D, A3E type accepted before September 10, 1976.	(1), (3), (7)
	H1D J1D, R1D, H3E, J3E, R3E type accepted before September 10, 1986.	(2), (4), (7)

NOTE: Unwanted RF radiation may be stated in mean power or in peak envelope power, provided it is stated in the same parameter as TP.

(1) At least 25 *dB* (decibels) on any frequency removed from the center of the authorized bandwidth by more than 50% up to and including 100% of the authorized bandwidth.

(2) At least 25 dB on any frequency removed from the center of the authorized bandwidth by more than 50% up to and including 150% of the authorized bandwidth.

(3) At least 35 dB on any frequency removed from the center of the authorized bandwidth by more than 100% up to and including 250% of the authorized bandwidth.

(4) At least 35 dB on any frequency removed from the center of the authorized bandwidth by more than 150% up to and including 250% of the authorized bandwidth.

(5) At least 83 $\log_{10}(f_d/5)$ dB on any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz), of more than 5 kHz up to and including 10 kHz.

(6) At least 116 $\log_{10}(f_d/6.1)$ dB, or if less, 50+10 $\log_{10}$ (TP) dB, on any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz), of more than 10 kHz up to and including 250% of the authorized bandwidth.

(7) At least 43+$\log_{10}$ (TP) dB on any frequency removed from the center of the authorized bandwidth by more than 250%.

(8) At least 53+$\log_{10}$ (TP) dB on any frequency removed from the center of the authorized bandwidth by more than 250%.

(9) At least 60 dB on any frequency twice or greater than twice the fundamental frequency.

NOTE: If spurious or harmonic emissions result in *harmful interference* (any transmission, radiation or induction that endangers the functioning of a radionavigation or other safety service or seriously degrades, obstructs or repeatedly interrupts a radiocommunication service operating in accordance with applicable laws, treaties and regulations), the FCC may, at its discretion, require appropriate technical changes in the station equipment to alleviate the interference, including the use of a low pass filter between the transmitter antenna terminals and the antenna feed line.

§ 95.633 Modulation standards.

(a) A GMRS transmitter that transmits emission types F1D, G1D, F3E or G3E must not exceed a peak frequency deviation of plus or minus 5 kHz.

(b) Each GMRS transmitter, except a mobile station transmitter with a power output of 2.5 W or less, must automatically prevent a greater than normal audio level from causing overmodulation. The transmitter also must include audio frequency low pass filtering, unless it complies with the applicable paragraphs of § 95.631 (without filtering.) The filter must be between the modulation limiter and the modulated stage of the transmitter. At any frequency (f in kHz) between 3 and 20 kHz, the filter must have an attenuation of at least 60 $\log_{10}(f/3)$ dB

ater than the attenuation at 1 kHz.
ove 20 kHz, it must have an attenu-
on of at least 50 dB greater than
attenuation at 1 kHz.

) When emission type A3E is trans-
ted, the modulation must be great-
than 85% but must not exceed
%. Simultaneous amplitude modu-
on and frequency or phase modula-
of a transmitter are not permit-

) When emission type A3E is
smitted by a CB transmitter
ing a TP of greater than 2.5 W, the
transmitter must automatically
ent the modulation from exceed-
100%.

Each CB transmitter that trans-
emission type H3E, J3E or R3E
t be capable of transmitting the
r sideband. The capability of also
smitting the lower sideband is per-
ed.

35 Maximum transmitter power.

No GMRS transmitter, under
condition of modulation, shall
ed:

50 W *Carrier power* (average TP
g one unmodulated RF cycle)
transmitting emission type A1D,
G1D, A3E, F3E or G3E.

50 W peak envelope TP when
mitting emission type H1D, J1D,
H3E, J3E or R3E.

No R/C transmitter, under any
tion of modulation, shall exceed
rier power or peak envelope TP
le-sideband only) of:

4 W in the 26-27 MHz frequency
except on channel frequency
5 MHz;

25 W on channel frequency
5 MHz;

0.75 W in the 72-76 MHz frequen-
nd.

No CB transmitter, under any
tion of modulation, shall exceed:

4 W Carrier power when trans-
g emission type A1D or A3E;

12 W peak envelope TP when
mitting emission type H1D, J1D,
H3E, J3E or R3E. Each CB
mitter which transmits emission
H3E, J3E or R3E must automati-
prevent the TP from exceeding
peak envelope TP or the manu-
er's rated peak envelope TP,
ever is less.

[53 FR 36789, Sept. 22, 1988; 53 FR 44144, Nov. 1, 1988]

TYPE ACCEPTANCE REQUIREMENTS

§ 95.641 Control accessibility.

(a) No control, switch or other type of adjustment which, when manipulated, can result in a violation of the rules shall be accessible from the transmitter operating panel or from exterior of the transmitter enclosure.

(b) An R/C transmitter which incorporates plug-in frequency determining modules which are changed by the user must be type accepted with the modules. Each module must contain all of the frequency determining circuitry including the oscillator. Plug-in crystals are not considered modules and must not be accessible to the user.

§ 95.643 R/C transmitter antenna.

The antenna of each R/C station transmitting in the 72-76 MHz band must be an integral part of the transmitter. The antenna must have no gain (as compared to a half-wave dipole) and must be vertically polarized.

§ 95.645 Power capability.

No CB or R/C transmitter shall incorporate provisions for increasing its transmitter power to any level in excess of the limit specified in § 95.635.

§ 95.647 Crystal control required.

All transmitters used in the Personal Radio Services must be crystal controlled, except a R/C transmitter which transmits in the 26-27 MHz frequency band.

§ 95.649 Instructions and warnings.

(a) A user's instruction manual must be supplied with each transmitter marketed, and one copy (a draft or preliminary copy is acceptable provided a final copy is provided when completed) must be forwarded to the FCC with each request for type acceptance.

(b) The instruction manual must contain all information necessary for the proper installation and operation of the transmitter including:

(1) Instructions concerning all controls, adjustments and switches that may be operated or adjusted without resulting in a violation of the rules.

(2) Warnings concerning any adjustment that could result in a violation of the rules or that is recommended to be performed by or under the immediate supervision and responsibility of a person certified as technically qualified to perform transmitter maintenance and repair duties in the private land mobile services and fixed services by an organization or committee representative of users of those services.

(3) Warnings concerning the replacement of any transmitter component (crystal, semiconductor, etc.) that could result in a violation of the rules.

(4) For a CMRS transmitter, warnings concerning licensing requirements and information concerning license application procedures.

§ 95.651 Frequency capability.

(a) No transmitter will be type accepted for use in the CB service if it is equipped with a frequency capability not listed in § 95.625, and no transmitter will be type accepted for use in the GMRS if it is equipped with a frequency capability not listed in § 95.621, unless such transmitter is also type accepted for use in another radio service for which the frequency is authorized and for which type acceptance is also required. (Transmitters with frequency capability for the Amateur Radio Services, Military Affiliate Radio System and Civil Air Patrol will not be type accepted.)

(b) All frequency determining circuitry (including crystals) and programming controls in each CB transmitter and in each GMRS transmitter must be internal to the transmitter and must not be accessible from the exterior of the transmitter operating panel or from the exterior of the transmitter enclosure.

(c) No add-on device, whether internal or external, the function of which is to extend the transmitting frequency capability of a CB transmitter beyond its original capability, shall be manufactured, sold or attached to any CB station transmitter.

[53 FR 47718, Nov. 25, 1988]

ADDITIONAL TYPE ACCEPTANCE REQUIREMENTS FOR CB TRANSMITTERS

§ 95.661 [Reserved]

§ 95.663 CB transmitter power.

The dissipation rating of all the semiconductors or electron tubes which supply RF power to the antenna terminals of each CB transmitter must not exceed 10 W. For semiconductors, the dissipation rating is the greater of the collector or device dissipation value established by the manufacturer of the semiconductor. These values may be temperature de-rated by no more than 50° C. For an electron tube, the dissipation rating is the Intermittent Commercial and Amateur Service plate dissipation value established by the manufacturer of the electron tube.

§ 95.665 External controls.

(a) Only the following external transmitter controls, connections or devices will normally be permitted in a CB transmitter:

(1) Primary power connection. (Circuitry or devices such as rectifiers, transformers, or inverters which provide the nominal rated transmitter primary supply voltage may be used without voiding the transmitter type acceptance.)

(2) Microphone connection.

(3) Antenna terminals.

(4) Audio frequency power amplifier output connector and selector switch.

(5) On-off switch for primary power to transmitter. This switch may be combined with receiver controls such as the receiver on-off switch and volume control.

(6) Upper/lower sideband selector switch (for a transmitter that transmits emission type H3E, J3E or R3E).

(7) Carrier level selector control (for a transmitter that transmits emission type H3E, J3E or R3E.) This control may be combined with the sideband selector switch.

(8) Channel frequency selector switch.

(9) Transmit/receive selector switch.

(10) Meter(s) and selector switch(es) for monitoring transmitter performance.

(11) Pilot lamp(s) or meter(s) to indi-cate the presence of RF output power or that the transmitter control circuits are activated to transmit.

(b) The FCC may authorize addi-ional controls, connections or devices after considering the functions to be erformed by such additions.

95.667 Serial number.

The serial number of each CB trans-itter must be engraved on the trans-itter chassis.

95.669 Copy of rules.

A copy of part 95, subpart D, of the CC Rules, current at the time of acking of the transmitter, must be rnished with each CB transmitter arketed.

PPENDIX 1 TO PART 95—GLOSSARY OF TERMS

he definitions used in part 95, subpart E :

uthorized bandwidth. Maximum permis-le bandwidth of a transmission.

arrier power. Average TP during one un-dulated RF cycle.

B. Citizens Band Radio Service.

B transmitter. A transmitter that oper- or is intended to operate at a station horized in the CB.

hannel frequencies. Reference frequen- from which the carrier frequency, sup-sed or otherwise, may not deviate by e than the specified frequency toler-e.

ystal. Quartz piezo-electric element.

ystal controlled. Use of a crystal to es-ish the transmitted frequency.

. Decibels.

C. Federal Communications Commis-

tering. Refers to the requirement in 533(b).

IRS. General Mobile Radio Service.

IRS transmitter. A transmitter that op- or is intended to operate at a station orized in the GMRS.

rmful interference. Any transmission, tion or induction that endangers the ioning of a radionavigation or other service or seriously degrades, ob-s or repeatedly interrupts a radiocom-cation service operating in accordance applicable laws, treaties and regula-

n power. TP averaged over at least 30 of the lowest modulating frequency, lly 0.1 seconds at maximum power.

Peak envelope power. TP averaged during 1 RF cycle at the highest crest of the modulation envelope.

R/C. Radio Control Radio Service.

R/C transmitter. A transmitter that operates or is intended to operate at a station authorized in the R/C.

RF. Radio frequency.

Transmitter. Apparatus that converts electrical energy received from a source into RF energy capable of being radiated.

TP. RF transmitter power expressed in W, either mean or peak envelope, as measured at the transmitter output antenna terminals.

W. Watts.

PART 97—AMATEUR RADIO SERVICE

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APPENDIX 1 TO PART 97—PLACES WHERE THE AMATEUR SERVICE IS REGULATED BY THE FCC

APPENDIX 2 TO PART 97—VEC REGIONS

AUTHORITY: 48 Stat. 1066, 1082, as amended; 47 U.S.C. 154, 303. Interpret or apply 48 Stat. 1064-1068, 1081-1105, as amended; 47 U.S.C. 151-155, 301-609, unless otherwise noted.

SOURCE: 54 FR 25857, June 20, 1989, unless otherwise noted.

Subpart A—General Provisions

§ 97.1 Basis and purpose.

The rules and regulations in this part are designed to provide an amateur radio service having a fundamental purpose as expressed in the following principles:

(a) Recognition and enhancement of the value of the amateur service to the public as a voluntary noncommercial communication service, particularly with respect to providing emergency communications.

(b) Continuation and extension of the amateur's proven ability to contribute to the advancement of the radio art.

(c) Encouragement and improvement of the amateur service through rules which provide for advancing skills in both the communication and technical phases of the art.

(d) Expansion of the existing reservoir within the amateur radio service of trained operators, technicians, and electronics experts.

(e) Continuation and extension of the amateur's unique ability to enhance international goodwill.

§ 97.3 Definitions.

(a) The definitions of terms used in part 97 are:

(1) *Amateur operator.* A person holding a written authorization to be the control operator of an amateur station.

(2) *Amateur radio services.* The amateur service, the amateur-satellite service and the radio amateur civil emergency service.

(3) *Amateur-satellite service.* A radiocommunication service using stations on Earth satellites for the same purpose as those of the amateur service.

(4) *Amateur service.* A radiocommunication service for the purpose of self-training, intercommunication and technical investigations carried out by amateurs, that is, duly authorized persons interested in radio technique solely with a personal aim and without pecuniary interest.

(5) *Amateur station.* A station in an amateur radio service consisting of the apparatus necessary for carrying on radiocommunications.

(6) *Automatic control.* The use of devices and procedures for control of a station when it is transmitting so that compliance with the FCC Rules is achieved without the control operator being present at a control point.

(7) *Auxiliary station.* An amateur station transmitting communications

int-to-point within a system of coop- ating amateur stations.

8) *Bandwidth.* The width of a fre- ency band outside of which the an power of the total emission is at- uated at least 26 dB below the an power of the total emission, in- ding allowances for transmitter ft or Doppler shift.

9) *Beacon.* An amateur station nsmitting communications for the poses of observation of propaga- and reception or other related ex- imental activities.

0) *Broadcasting.* Transmissions in- ied for reception by the general lic, either direct or relayed.

1) *Control operator.* An amateur ator designated by the licensee of ation to be responsible for the smissions from that station to re compliance with the FCC s.

) *Control point.* The location at h the control operator function is ormed.

) *CSCE.* Certificate of successful letion of an examination.

) *Earth station.* An amateur sta- located on, or within 50 km of, Earth's surface intended for com- cations with space stations or other Earth stations by means of r more other objects in space.

EIC. Engineer in Charge of an Field Facility.

External RF power amplifier. A capable of increasing power t when used in conjunction with, ot an integral part of, a transmit-

External RF power amplifier number of electronic parts, when assembled, is an external wer amplifier, even if additional are required to complete assem-

FAA. Federal Aviation Adminis-

FCC. Federal Communications ission.

Frequency coordinator. An recognized in a local or regional amateur operators whose sta- re eligible to be auxiliary or re- stations, that recommends it/receive channels and associ- perating and technical param- or such stations in order to avoid or minimize potential interference.

(21) *Harmful interference.* Interference which endangers the functioning of a radionavigation service or of other safety services or seriously degrades, obstructs or repeatedly interrupts a radiocommunication service operating in accordance with the Radio Regulations.

(22) *Indicator.* Words, letters or numerals appended to and separated from the call sign during the station identification.

(23) *Information bulletin.* A message directed only to amateur operators consisting solely of subject matter of direct interest to the amateur service.

(24) *International Morse code.* A dot-dash code as defined in International Telegraph and Telephone Consultative Committee (CCITT) Recommendation F.1 (1984), Division B, I. Morse code.

(25) *ITU.* International Telecommunication Union.

(26) *Line A.* Begins at Aberdeen, WA, running by great circle arc to the intersection of 48°N, 120°W, thence along parallel 48°N, to the intersection of 95°W, thence by great circle arc through the southernmost point of Duluth, MN, thence by great circle arc to 45°N, 85°W, thence southward along meridian 85°W, to its intersection with parallel 41°N, thence along parallel 41°N, to its intersection with meridian 82°W, thence by great circle arc through the southernmost point of Bangor, ME, thence by great circle arc through the southernmost point of Searsport, ME, at which point it terminates.

(27) *Local control.* The use of a control operator who directly manipulates the operating adjustments in the station to achieve compliance with the FCC Rules.

(28) *National Radio Quiet Zone.* The area in Maryland, Virginia and West Virginia Bounded by 39° 15′N on the north, 78° 30′W on the east, 37° 30′N on the south and 80° 30′W on the west.

(29) *Question pool.* All current examination questions for a designated written examination element.

(30) *Question set.* A series of examination on a given examination selected from the question pool.

(31) *Radio Regulations.* The latest ITU *Radio Regulations* to which the United States is a party.

(32) *RACES* (radio amateur civil emergency service). A radio service using amateur stations for civil defense communications during periods of local, regional or national civil emergencies.

(33) *Remote control.* The use of a control operator who indirectly manipulates the operating adjustments in the station through a control link to achieve compliance with the FCC Rules.

(34) *Repeater.* An amateur station that automatically retransmits the signals of other stations.

(35) *Space station.* An amateur station located more than 50 km above the Earth's surface.

(36) *Spurious emission.* An emission, or frequencies outside the necessary bandwidth of a transmission, the level of which may be reduced without affecting the information being transmitted.

(37) *Telecommand station.* An amateur station that transmits communications to initiate, modify or terminate functions of a space station.

(38) *Third party communications.* A message from the control operator (first party) of an amateur station to another amateur station control operator (second party) on behalf of another person (third party).

(39) *VE.* Volunteer examiner.

(40) *VEC.* Volunteer-examiner coordinator.

(b) The definitions of technical smybols used in this part are:

(1) *EHF* (extremely high frequency). The frequency range 30-300 GHz.

(2) *HF* (high frequency). The frequency range 3-30 MHz.

(3) *Hz.* Hertz.

(4) *m.* Meters.

(5) *MF* (medium frequency). The frequency range 300-3000 kHz.

(6) *PEP* (peak envelope power). The average power supplied to the antenna transmission line by a transmitter during one RF cycle at the crest of the modulation envelope taken under normal operating conditions.

(7) *RF.* Radio frequency.

(8) *SHF* (super-high frequency). The frequency range 3-30 GHz.

(9) *UHF* (ultra-high frequency). The frequency range 300-3000 MHz.

(10) *VHF* (very-high frequency). The frequency range 30-300 MHz.

(11) *W.* Watts.

(c) The following terms are used in this part to indicate emission types. Refer to § 2.201 of the FCC Rules, *Emission, modulation and transmission characteristics,* for information on emission type designators.

(1) *CW.* International Morse code telegraphy emissions having designators with A, C, H, J or R as the first symbol; 1 as the second symbol; A or B as the third symbol; and emissions J2A and J2B.

(2) *Data.* Telemetry, telecommand and computer communications emissions having designators with A, C, D, F, G, H, J or R as the first symbol; 1 as the second symbol; D as the third symbol; and emission J2D. Only a digital code of a type specifically authorized in this part may be transmitted.

(3) *Image.* Facsimile and television emissions having designators with A, C, D, F, G, H, J or R as the first symbol; 1, 2 or 3 as the second symbol; C or F as the third symbol; and emissions having B as the first symbol; 7, 8 or 9 as the second symbol; W as the third symbol.

(4) *MCW.* Tone-modulated international Morse code telegraphy emissions having designators with A, C, D, F, G, H or R as the first symbol; 2 as the second symbol; A or B as the third symbol.

(5) *Phone.* Speech and other sound emissions having designators with A, C, D, F, G, H, J or R as the first symbol; 1, 2 or 3 as the second symbol; E as the third symbol. Also speech emissions having B as the first symbol; 7, 8 or 9 as the second symbol; E as the third symbol. MCW for the purpose of performing the station identification procedure, or for providing telegraphy practice interspersed with speech. Incidental tones for the purpose of selective calling or alerting or to control the level of a demodulated signal may also be considered phone.

(6) *Pulse.* Emissions having designators with K, L, M, P, Q, V or W as the

st symbol; 0, 1, 2, 3, 7, 8, 9 or X as
e second symbol; A, B, C, D, E, F, N,
or X as the third symbol.

7) *RTTY*. Narrow-band direct-print-
g telegraphy emissions having desig-
tors with A, C, D, F, G, H, J or R as
e first symbol; 1 as the second
mbol; B as the third symbol; and
ission J2B. Only a digital code of a
pe specifically authorized in this
rt may be transmitted.

8) *SS*. Spread-spectrum emissions
ng bandwidth-expansion modula-
n emissions having designators with
C, D, F, G, H, J or R as the first
mbol; X as the second symbol; X as
e third symbol. Only a SS emission
a type specifically authorized in
s part may be transmitted.

9) *Test*. Emissions containing no in-
mation having the designators with
s the third symbol. Test does not
lude pulse emissions with no infor-
tion or modulation unless pulse
issions are also authorized in the
quency band.

.5 Station license required.

) When a station is transmitting
any amateur service frequency
n a geographic location within 50
of the Earth's surface where the
teur service is regulated by the
, the person having physical con-
of the apparatus must hold an
-issued written authorization for
mateur station.

) When a station is transmitting
any amateur service frequency
a location within 50 km of the
h's surface and aboard any vessel
raft that is documented or regis-
d in the United States, the person
ng physical control of the appara-
must hold an FCC-issued written
orization for an amateur station.

When a station is transmitting on
amateur-satellite service frequen-
rom a location more than 50 km
e the Earth's surface aboard any
that is documented or registered
he United States, the person
ng physical control of the appara-
must hold an FCC-issued written
orization for an amateur station.

The types of written authoriza-
that permit amateur station op-
on where the amateur service is
lated by the FCC are:

(1) An operator/primary station license (FCC Form 660) issued to the person by the FCC. A primary station license is issued only to a person, together with an operator license on the same document. Every amateur operator licensed by the FCC must have one, but only one, primary station license. Except a representative of a foreign government, any person who qualifies by examination is eligible to apply for an operator/primary station license.

(2) A club station license (FCC Form 660) issued to the person by the FCC. A club station license is issued only to the person who is the license trustee designated by an officer of the club. The trustee must hold an FCC-issued Amateur Extra, Advanced, General, or Technician operator license. The club must be composed of at least two persons and must have a name, a document of organization, management and a primary purpose devoted to amateur service activities consistent with this part.

(3) A military recreation station license (FCC Form 660) issued to the person by the FCC. A military recreation station license is issued only to the person who is the license custodian designated by the official in charge of the United States military recreational premises where the station is situated. The custodian must not be a representative of a foreign government. The custodian need not hold an amateur operator license.

(4) A RACES station license (FCC Form 660) issued to the person by the FCC. A RACES station license is issued only to the person who is the license custodian designated by the official responsible for the governmental agency served by that civil defense organization. The custodian must not be a representative of a foreign government. The custodian must be the civil defense official responsible for coordination of all civil defense activities in the area concerned. The custodian need not hold an amateur operator license.

(5) A reciprocal permit for alien amateur licensee (FCC Form 610-AL) issued to the person by the FCC. A reciprocal permit for alien amateur licensee is issued only to a person who is

a citizen of a country with which the United States has arrangements to grant reciprocal operating permits to visiting alien amateur operators. The person must be a citizen of the same country that issued the amateur service license. No person who is a citizen of the United States, regardless of any other citizenship also held, is eligible for a reciprocal permit for alien amateur licensee. No person holding an FCC-issued amateur service license will be issued a reciprocal permit for alien amateur licensee.

(6) An amateur service license issued to the person by the Government of Canada. The person must be a Canadian citizen.

(e) The written authorization for an amateur station authorizes the use in accordance with the FCC Rules of all transmitting apparatus under the physical control of the station licensee at points where the amateur service is regulated by the FCC. The original written authorization document or a photocopy thereof must be retained at the station.

[54 FR 25857, June 20, 1989; 54 FR 39535, Sept. 27, 1989]

§ 97.7 Control operator required.

When transmitting, each amateur station must have a control operator. Only a person holding one of the following documents may be the control operator of a station:

(a) An operator/primary station license (FCC Form 660) issued to the person by the FCC.

(b) A reciprocal permit for alien amateur licensee (FCC Form 610-AL) issued to the person by the FCC.

(c) An amateur service license issued to a Canadian citizen by the Government of Canada.

§ 97.9 Operator license.

(a) There are 5 classes of operator licenses: Novice, Technician, General, Advanced and Amateur Extra. An operator license authorizes the holder to be the control operator of a station with the privileges of the operator class specified on the license. The license document or a photocopy thereof must be in the personal possession of the licensee at all times when the person is the control operator of a s tion.

(b) A person holding a Novice, Te nician, General, or Advanced Class erator license who has properly fil with the FCC an application for higher operator class which has n yet been acted upon, and who holds CSCE indicating that the person co pleted the necessary examinatio within the previous 365 days is autho ized to exercise the rights and pri leges of the higher operator class.

§ 97.11 Stations aboard ships or aircraft.

(a) The installation and operation an amateur station on a ship or ai craft must be approved by the maste of the ship or pilot in command of th aircraft.

(b) The station must be separat from and independent of all othe radio apparatus installed on the shi or aircraft, except a common antenn may be shared with a voluntary shi radio installation. The station's tran missions must not cause interferenc to any other apparatus installed o the ship or aircraft.

(c) The station must not constitute hazard to the safety of life or proper ty. For a station aboard an aircraft the apparatus shall not be operatec while the aircraft is operating under Instrument Flight Rules, as defined by the FAA, unless the station has been found to comply with all applicable FAA Rules.

§ 97.13 Restrictions on station location.

(a) Before placing an amateur station on land of environmental importance or that is significant in American history, architecture or culture, the licensee may be required to take certain actions prescribed by § 1.1301-1.1319 of the FCC Rules.

(b) A station within 1600 m (1 mile) of an FCC monitoring facility must protect that facility from harmful interference. Failure to do so could result in imposition of operating restrictions upon the amateur station by an EIC pursuant to § 97.121 of this Part. Geographical coordinates of the facilities that require protection are listed in § 0.121(c) of the FCC Rules.

[54 FR 25857, June 20, 1989, as amended at 55 FR 20398, May 16, 1990]

§ 97.15 Station antenna structures.

(a) Unless the amateur station licensee has received prior approval from the FCC, no antenna structure, including and radiating elements, tower, supports and all appurtenances, may be higher than 61 m (200 feet) above ground level at its site.

(b) Unless the amateur station licensee has received prior approval from the FCC, no antenna structure, at an airport or heliport that is available for public use and is listed in the *Airport Directory* of the current *Airman's Information Manual* or in either the *Alaska* or *Pacific Airman's Guide and Chart Supplement;* or at an airport or heliport under construction that is the subject of a notice or proposal on file with the FAA, and except for military airports, it is clearly indicated that the airport will be available for public use; or at an airport or heliport that is operated by the armed forces of the United States; or at a place near any of these airports or heliports, may be higher than:

(1) 1 m above the airport elevation for each 100 m from the nearest runway longer than 1 km within 6.1 km of the antenna structure.

(2) 2 m above the airport elevation for each 100 m from the nearest runway shorter than 1 km within 3.1 km of the antenna structure.

(3) 4 m above the airport elevation for each 100 m from the nearest landing pad within 1.5 km of the antenna structure.

(c) An amateur station antenna structure no higher than 6.1 m (20 feet) above ground level at its site or no higher than 6.1 m above any natural object or existing manmade structure, other than an antenna structure, is exempt from the requirements of paragraphs (a) and (b) of this section.

(d) Further details as to whether an aeronautical study and/or obstruction marking and lighting may be required, and specifications for obstruction marking and lighting, are contained in Part 17 of the FCC Rules, *Construction, Marking, and Lighting of Antenna Structures.* To request approval to place an antenna structure higher than the limits specified in paragraphs (a), (b), and (c) of this section, the licensee must notify the FAA on FAA Form 7460-1 and the FCC on FCC Form 854.

(e) Except as otherwise provided herein, a station antenna structure may be erected at heights and dimensions sufficient to accommodate amateur service communications. [State and local regulation of a station antenna structure must not preclude amateur service communications. Rather, it must reasonably accommodate such communications and must constitute the minimum practicable regulation to accomplish the state or local authority's legitimate purpose. [*See* PRB-1, 101 FCC 2d 952 (1985) for details.]

[54 FR 25857, June 20, 1989; 54 FR 39535, Sept. 27, 1989]

§ 97.17 Application for new license.

(a) Any qualified person is eligible to apply for an amateur service license.

(b) Each application for a new operator/primary station license must be made on FCC Form 610. Each application for a reciprocal permit for alien amateur licensee must be made on FCC Form 610-A. No new license for a club, military recreation, or RACES station will be issued.

(c) Each application for a new operator/primary station license and each application involving a change in operator class must be submitted to the VEs administering the qualifying examination.

(d) Any qualified person is eligible to apply for a reciprocal permit for alien amateur licensee. The application must be submitted to the FCC, P.O. Box 1020, Gettysburg, PA 17326.

(e) No person shall obtain or attempt to obtain, or assist another person to obtain or attempt to obtain, an operator license or reciprocal permit for alien amateur licensee by fraudulent means.

(f) A call sign will be assigned systematically to each station. The FCC will issue public announcements detailing the policies and procedures of the call sign assignment system. The FCC will not grant any request for a specific call sign.

§ 97.19 Application for a renewed or modified license.

(a) Each application for a renewed or modified operator/primary station license must be made on FCC Form 610. Each application for a renewed or modified club, military recreation or RACES station license must be made on FCC Form 610-B. A reciprocal permit for alien amateur licensee is not renewable. A new reciprocal permit may be issued upon proper application.

(b) Each application for a renewed or modified amateur service license must be accompanied by a photocopy of the license document or the original document, unless it has been lost, mutilated, or destroyed. Each application for a modified operator license involving a change in operator class must be submitted to the VEs administering the qualifying examination. All other applications must be submitted to: FCC, P.O. Box 1020, Gettysburg, PA 17326.

(c) When the licensee has submitted a timely application for renewal of an unexpired license (between 60 and 90 days prior to the end of the license term is recommended), the licensee may continue to operate until the disposition of the application has been determined. If a license expires, application for renewal may be made during a grace period of 2 years after the expiration date. During this grace period, the expired license is not valid. A license renewed during the grace period must be dated as of the date of the renewal.

[54 FR 25857, June 20, 1989, as amended at 55 FR 30456, July 26, 1990]

§ 97.21 Mailing address and station location.

Each application for an amateur service license and each application for a reciprocal permit for alien amateur licensee must show a mailing address and a station location (the addresses may be the same) in an area where the amateur service is regulated by the FCC. The mailing address must be one where the licensee can receive mail delivery by the United States Postal Service. The station location must be a place where a station can be physically located. (A post office box, rural delivery service number, or general delivery is unsuitable as a station location).

[54 FR 25857, June 20, 1989, as amended at 55 FR 30456, July 26, 1990]

§ 97.23 License term.

(a) An amateur service license is normally issued for a 10-year term.

(b) A reciprocal permit for alien amateur licensee is normally issued for a 1-year term.

§ 97.25 FCC modification of station license.

(a) The FCC may modify a station license, either for a limited time or for the duration of the term thereof, if it determines:

(1) That such action will promote the public interest, convenience and necessity; or

(2) That such action will promote fuller compliance with the provisions of the Communications Act of 1934, as amended, or of any treaty ratified by the United States.

(b) When the FCC makes such a determination, it will issue an order of modification. The order will not become final until the licensee is notified in writing of the proposed action and the grounds and reasons therefor. The licensee will be given reasonable opportunity of no less than 30 days to protest the modification; except that, where safety of life or property is involved, a shorter priod of notice may be provided. Any protest by a licensee of an FCC order of modification will be handled in accordance with the provisions of 47 U.S.C. 316.

§ 97.27 Replacement license.

Each licensee or permittee whose original document is lost, mutilated or destroyed must request a replacement. The request must be made to: FCC, P.O. Box 1020, Gettysburg, PA 17326. A statement of how the document was lost, mutilated or destroyed must be attached to the request. A replacement license must bear the same expiration date as the license that it replaces.

Subpart B—Station Operation Standards

§ 97.101 General standards.

(a) In all respects not specifically covered by FCC Rules each amateur station must be operated in accordance with good engineering and good amateur practice.

(b) Each station licensee and each control operator must cooperate in selecting transmitting channels and in making the most effective use of the amateur service frequencies. No frequency will be assigned for the exclusive use of any station.

(c) At all times and on all frequencies, each control operator must give priority to stations providing emergency communications, except to stations transmitting communications for training drills and tests in RACES.

(d) No amateur operator shall willfully or maliciously interfere with or cause interference to any radio communication or signal.

§ 97.103 Station licensee responsibilities.

(a) The station licensee is responsi- le for the proper operation of the sta- ion in accordance with the FCC ules. When the control operator is a ifferent amateur operator than the tation licensee, both persons are qually responsible for proper opera- tion of the station.

(b) The station licensee must desig- ate the station control operator. The CC will presume that the station li- ensee is also the control operator, nless documentation to the contrary in the station records.

(c) The station licensee must make e station and the station records ailable for inspection upon request an FCC representative. When emed necessary by an EIC to assure mpliance with the FCC Rules, the tion licensee must maintain a ord of station operations containing h items of information as the EIC y require in accord with § 0.314(x) the FCC Rules.

.105 Control operator duties.

) The control operator must ure the immediate proper oper- n of the station, regardless of the e of control.

(b) A station may only be operated in the manner and to the extent permitted by the privileges authorized for the class of operator license held by the control operator.

§ 97.107 Alien control operator privileges.

(a) The privileges available to a control operator holding an amateur service license issued by the Government of Canada are:

(1) The terms of the *Convention Between the United States and Canada (TIAS No. 2508) Relating to the Operation by Citizens of Either Country of Certain Radio Equipment or Stations in the Other Country;*

(2) The operating terms and conditions of the amateur service license issued by the Government of Canada; and

(3) The applicable provisions of the FCC Rules, but not to exceed the control operator privileges of an FCC-issued Amateur Extra Class operator license.

(b) The privileges available to a control operator holding an FCC-issued reciprocal permit for alien amateur licensee are:

(1) The terms of the agreement between the alien's government and the United States;

(2) The operating terms and conditions of the amateur service license issued by the alien's government;

(3) The applicable provisions of the FCC Rules, but not to exceed the control operator privileges of an FCC-issued Amateur Extra Class operator license; and

(4) None, if the holder of the reciprocal permit has obtained an FCC-issued operator/primary station license.

(c) At any time the FCC may, in its discretion, modify, suspend, or cancel the amateur service privileges within or over any area where radio services are regulated by the FCC of any Canadian amateur service licensee or alien reciprocal permittee.

§ 97.109 Station control.

(a) Each amateur station must have at least one control point.

(b) When a station is being locally controlled, the control operator must be at the control point. Any station may be locally controlled.

(c) When a station is being remotely controlled, the control operator must be at the control point. Any station may be remotely controlled.

(d) When a station is being automatically controlled, the control operator need not be at the control point. Only stations transmitting RTTY or data emissions on the 6 m or shorter wavelength bands, and stations specifically designated elsewhere in this part may be automatically controlled. Automatic control must cease upon notification by an EIC that the station is transmitting improperly or causing harmful interference to other stations. Automatic control must not be resumed without prior approval of the EIC.

(e) No station may be automatically controlled while transmitting third party communications, except a station retransmitting digital packet radio communications on the 6 m and shorter wavelength bands. Such stations must be using the American Radio Relay League, Inc. *AX.25 Amateur Packet—Radio Link—Layer Protocol, Version 2.0,* October 1984 (or compatible) which is available from American Radio Relay League, Inc., 225 Main Street, Newington, Connecticut 06111. The retransmitted messages must originate at a station that is being locally or remotely controlled.

[54 FR 39535, Sept. 27, 1989]

§ 97.111 Authorized transmissions.

(a) An amateur station may transmit the following types of two-way communications:

(1) Transmissions necessary to exchange messages with other stations in the amateur service, except those in any country whose administration has given notice that it objects to such communications. The FCC will issue public notices of current arrangements for international communications;

(2) Transmissions necessary to exchange messages with a station in another FCC-regulated service while providing emergency communications;

(3) Transmissions necessary to exchange messages with a United States government station, necessary to providing communications in RACES; and

(4) Transmissions necessary to exchange messages with a station in a service not regulated by the FCC, but authorized by the FCC to communicate with amateur stations. An amateur station may exchange messages with a participating United States military station during an Armed Forces Day Communications Test.

(b) In addition to one-way transmissions specifically authorized elsewhere in this Part, an amateur station may transmit the following types of one-way communications:

(1) Brief transmissions necessary to make adjustments to the station;

(2) Brief transmissions necessary to establishing two-way communications with other stations;

(3) Transmissions necessary to remotely control a device from a distant location;

(4) Transmissions necessary to providing emergency communications;

(5) Transmissions necessary to assisting persons learning, or improving proficiency in, the international Morse code; and

(6) Transmissions necessary to disseminate information bulletins.

§ 97.113 Prohibited transmissions.

(a) No amateur station shall transmit any communication the purpose of which is to facilitate the business or commercial affairs of any party. No station shall transmit communications as an alternative to other authorized radio services, except as necessary to providing emergency communications. A station may, however, transmit communications to:

(1) Facilitate the public's safe observation of, or safe participation in, a parade, race, marathon or similar public gathering. No amateur station shall transmit communications concerning moving, supplying and quartering observers and participants for any sponsoring organization unless the principal beneficiary of such communications is the public and any benefit to the sponsoring organization is incidental.

(2) Inform other amateur operators of the availability of apparatus normally used in an amateur station, including such apparatus for sale or

This exception is not authorized
y person seeking to derive a
by buying or selling such appa-
n a regular basis.
o station shall transmit mes-
or hire or for material compen-
direct or indirect, paid or prom-
he control operator of a club
however, may accept compen-
for such periods of time during
the station is transmitting te-
y practice or information bul-
rovided that:
he station transmits the teleg-
ractice and information bulle-
at least 40 hours per week;
e station schedules operations
amateur service MF and HF
using reasonable measures to
e coverage;
e schedule of normal operat-
s and frequencies is published
30 days in advance of the
ransmissions; and
e control operator does not
ny direct or indirect compen-
or periods during which the
s transmitting any other mate-

station shall transmit commu-
s in order to engage in any
broadcasting, nor to engage in
vity related to program pro-
or newsgathering for broad-
urposes. A station may, how-
ansmit communications to
news information about an
r dissemination to the public
e following conditions are

e information involves the im-
safety of life of individuals or
ediate protection of property;
e information is directly relat-
event;
information cannot be trans-
y any other means because
ommunications systems have
upted or because there are no
mmunication systems avail-
he place where the informa-
ginated; and
er means of communication
t be reasonably provided
at the time of the event.
station shall transmit: music;
munications or messages for
ose, or in connection with
ty, that is contrary to federal, state, or local law; messages in codes or ciphers where the intent is to obscure the meaning (except where specifically excepted elsewere in the part); obscene, indecent, or profane words, language, or meaning; and/or false or deceptive messages or signals.

(e) No station shall retransmit programs or signals emanating from any type of radio station other than an amateur station, except communications originating on United States Government frequencies between a space shuttle and its associated Earth stations. Prior approval for such retransmissions must be obtained from the National Aeronautics and Space Administration. Such retransmissions must be for the exclusive use of amateur operators.

(f) No amateur station, except an auxiliary, repeater or space station, may automatically retransmit the radio signals of other amateur stations.

§ 97.115 Third party communications.

(a) An amateur station may transmit messages for a third party to:

(1) Any station within the jurisdiction of the United States.

(2) Any station within the jurisdiction of any foreign government whose administration has made arrangements with the United States to allow amateur stations to be used for transmitting international communications on behalf of third parties. No station shall transmit messages for a third party to any station within the jurisdiction of any foreign government whose administration has not made such an arrangement. This prohibition does not apply to a message for any third party who is eligible to be a control operator of the station.

(b) The third party may participate in stating the message where:

(1) The control operator is present at the control point and is continuously monitoring and supervising the third party's participation; and

(2) The third party is not a prior amateur service licensee whose license was revoked; suspended for less than the balance of the license term and the suspension is still in effect; sus-

pended for the balance of the license term and relicensing has not taken place; or surrendered for cancellation following notice of revocation, suspension or monetary forfeiture proceedings. The third party may not be the subject of a cease and desist order which relates to amateur service operation and which is still in effect.

(c) At the end of an exchange of international third party communications, the station must also transmit in the station identification procedure the call sign of the station with which a third party message was exchanged.

[54 FR 25857, June 20, 1989; 54 FR 39535, Sept 27, 1989]

§ 97.117 International communications.

Transmissions to a different country, where permitted, shall be made in plain language and shall be limited to messages of a technical nature relating to tests, and, to remarks of a personal character for which, by reason of their unimportance, recourse to the public telecommunications service is not justified.

§ 97.119 Station identification.

(a) Each amateur station, except a space station or telecommand station, must transmit its assigned call sign on its transmitting channel at the end of each communication, and at least every 10 minutes during a communication, for the purpose of clearly making the source of the transmissions from the station known to those receiving the transmissions. No station may transmit unidentified communications or signals, or transmit as the station call sign, any call sign not authorized to the station.

(b) The call sign must be transmitted with an emission authorized for the transmitting channel in one of the following ways:

(1) By a CW emission. When keyed by an automatic device used only for identification, the speed must not exceed 20 words per minute;

(2) By a phone emission in the English language. Use of a phonetic alphabet as an aid for correct station identification is encouraged;

(3) By a RTTY emission using a specified digital code when all or part of the communications are transmitted by a RTTY or data emission;

(4) By an image emission conforming to the applicable transmission standards, either color or monochrome, of § 73.682(a) of the FCC Rules when all or part of the communications are transmitted in the same image emission; or

(5) By a CW or phone emission during SS emission transmission on a narrow bandwidth frequency segment. Alternatively, by the changing of one or more parameters of the emission so that a conventional CW or phone emission receiver can be used to determine the station call sign.

(c) An indicator may be included with the call sign. It must be separated from the call sign by the slant mark or by any suitable word that denotes the slant mark. If the indicator is self-assigned, it must be included after the call sign and must not conflict with any other indicator specified by the FCC Rules or with any prefix assigned to another country.

(d) When the operator license class held by the control operator exceeds that of the station licensee, an indicator consisting of the call sign assigned to the control operator's station must be included after the call sign.

(e) When the control operator is using privileges on the basis of holding a CSCE, an indicator must be included after the call sign as follows:

(1) KT for Technician Class operator;

(2) AG for General Class operator;

(3) AA for Advanced Class operator; or

(4) AE for Amateur Extra Class operator.

(f) When the station is transmitting under the authority of a reciprocal permit for alien amateur licensee, an indicator consisting of the appropriate letter-numeral designating the station location must be included before the call sign issued to the station by the licensing country. When the station is transmitting under the authority of an amateur service license issued by the Government of Canada, a station location indicator must be included after the call sign. At least once during each intercommunication, the identification announcement must inlude the geographical location as early as possible by city and state, ommonwealth or possession.

54 FR 25857, June 20, 1989, as amended at FR 39535, Sept. 27, 1989; 55 FR 30457, ly 26, 1990]

97.121 Restricted operation.

(a) If the operation of an amateur ation causes general interference to e reception of transmissions from ations operating in the domestic oadcast service when receivers of od engineering design, including equate selectivity characteristics, e used to receive such transmissions, d this fact is made known to the nateur station licensee, the amateur ation shall not be operated during e hours from 8 p.m. to 10:30 p.m., al time, and on Sunday for the ad- ional period from 10:30 a.m. until 1 n., local time, upon the frequency or quencies used when the interfer- ce is created.

b) In general, such steps as may be essary to minimize interference to tions operating in other services y be required after investigation by FCC.

Subpart C—Special Operations

.201 Auxiliary station.

) Any amateur station licensed to a der of a Technician, General, Ad- ced or Amateur Extra Class opera- license may be an auxiliary station. older of a Technician, General, Ad- ced or Amateur Extra Class opera- license may be the control opera- of an auxiliary station, subject to privileges of the class of operator se held.

) An auxiliary station may trans- only on the 1.25 m and shorter elength bands, except the 220.0- 5 MHz, 431-433 MHz and 435-438 z segments.

Where an auxiliary station es harmful interference to an- r auxiliary station, the licensees equally and fully responsible for ving the interference unless one on's operation is recommended by quency coordinator and the other on's is not. In that case, the li- ee of the non-coordinated auxiliary station has primary responsibilty to resolve the interference.

(d) An auxiliary station may be automatically controlled only when it is part of a system that includes a repeater station also being automatically controlled.

(e) An auxiliary station may transmit one-way communications.

§ 97.203 Beacon station.

(a) Any amateur station licensed to a holder of a Technician, General, Advanced or Amateur Extra Class operator license may be a beacon. A holder of a Technician, General, Advanced or Amateur Extra Class operator license may be the control operator of a beacon, subject to the privileges of the class of operator license held.

(b) A beacon must not concurrently transmit on more than 1 channel in the same amateur service frequency band, from the same station location.

(c) The transmitter power of a beacon must not exceed 100 W.

(d) A beacon may be automatically controlled while it is transmitting on the 28.20-28.30 MHz, 50.06-50.08 MHz, 144.275-144.300 MHz, 220.05-220.06 MHz, 222.05-222.06 MHz or 432.300-432.400 MHz segments, or on the 33 cm and shorter wavelength bands.

(e) Before establishing an automatically controlled beacon in the National Radio Quiet Zone or before changing the transmitting frequency, transmitter power, antenna height or directivity, the station licensee must give written notification thereof to the Interference Office, National Radio Astronomy Observatory, P.O. Box 2, Green Bank, WV 24944.

(1) The notification must include the geographical coordinates of the antenna, antenna ground elevation above mean sea level (AMSL), antenna center of radiation above ground level (AGL), antenna directivity, proposed frequency, type of emission, and transmitter power.

(2) If an objection to the proposed operation is received by the FCC from the National Radio Astronomy Observatory at Green Bank, Pocahontas County, WV, for itself or on behalf of the Naval Research Laboratory at Sugar Grove, Pendleton County, WV,

within 20 days from the date of notification, the FCC will consider all aspects of the problem and take whatever action is deemed appropriate.

(f) A beacon must cease transmissions upon notification by an EIC that the station is operating improperly or causing undue interference to other operations. The beacon may not resume transmitting without prior approval of the EIC.

(g) A beacon may transmit one-way communications.

[54 FR 25857, June 20, 1989, as amended at 55 FR 9323, Mar. 13, 1990]

§ 97.205 Repeater station.

(a) Any amateur station licensed to a holder of a Technician, General, Advanced or Amateur Extra Class operator license may be a repeater. A holder of a Technician, General, Advanced or Amateur Extra Class operator license may be the control operator of a repeater, subject to the privileges of the class of operator license held.

(b) A repeater may receive and retransmit only on the 10 m and shorter wavelength frequency bands except the 28.0-29.5 MHz, 50.0-51.0 MHz, 144.0-144.5 MHz, 145.5-146.0 MHz, 220.0-220.5 MHz, 431.0-433.0 MHz and 435.0-438.0 MHz segments.

(c) Where the transmissions of a repeater cause harmful interference to another repeater, the two station licensees are equally and fully responsible for resolving the interference unless the operation of one station is recommended by a frequency coordinator and the operation of the other station is not. In that case, the licensee of the non-coordinated repeater has primary responsibility to resolve the interference.

(d) A repeater may be automatically controlled.

(e) Ancillary functions of a repeater that are available to users on the input channel are not considered remotely controlled functions of the station. Limiting the use of a repeater to only certain user stations is permissible.

(f) Before establishing a repeater in the National Radio Quiet Zone or before changing the transmitting frequency, tramsitter power, antenna height or directivity, or the location of an existing repeater, the station licensee must give written notification thereof to the Interference Office, National Radio Astronomy Observatory, P.O. Box 2, Green Bank, WV 24944.

(1) The notification must include the geographical coordinates of the station antenna, antenna ground elevation above mean sea level (AMSL), antenna center of radiation above ground level (AGL), antenna directivity, proposed frequency, type of emission, and transmitter power.

(2) If an objection to the proposed operation is received by the FCC from the National Radio Astronomy Observatory at Green Bank, Pocahontas County, WV, for itself or on behalf of the Naval Research Laboratory at Sugar Grove, Pendleton County, WV, within 20 days from the date of notification, the FCC will consider all aspects of the problem and take whatever action is deemed appropriate.

[54 FR 25857, June 20, 1989, as amended at 55 FR 4613, Feb. 9, 1990]

§ 97.207 Space station.

(a) Any amateur station licensed to a holder of an Amateur Extra Class operator license may be a space station. A holder of any class operator license may be the control operator of a space station, subject to the privileges of the class of operator license held by the control operator.

(b) A space station must be capable of effecting a cessation of transmissions by telecommand whenever such cessation is ordered by the FCC.

(c) The following frequency bands and segments are authorized to space stations:

(1) The 17 m, 15 m, 12 m, and 10 m bands, 6 mm, 4 mm, 2 mm and 1 mm bands; and

(2) The 7.0-7.1 MHz, 14.00-14.25 MHz, 144-146 MHz, 435-438 MHz, 1260-1270 MHz, and 2400-2450 MHz, 3.40-3.41 GHz, 5.83-5.85 GHz, 10.45-10.50 GHz, and 24.00-24.05 GHz segments.

(d) A space station may automatically retransmit the radio signals of Earth stations and other space stations.

(e) A space station may transmit one-way communications.

f) Results of measurements made in
e space station, including those re-
ed to the function of the station,
nsmitted by a space station may
nsist of specially coded messages in-
ded to facilitate communications.

g) The licensee of each space sta-
n must give two written, pre-space
tion notifications to the Private
dio Bureau, FCC, Washington, DC
54. Each notification must be in
ord with the provisions of Articles
and 13 of the Radio Regulations.

) The first notification is required
less than 27 months prior to initiat-
space station transmissions and
t specify the information required
Appendix 4 and Resolution No. 642
he Radio Regulations.

) The second notification is re-
ed no less than 5 months prior to
ating space station transmissions
must specify the information re-
ed by Appendix 3 and Resolution
642 of the Radio Regulations.

) The licensee of each space sta-
must give a written, in-space sta-
notification to the Private Radio
eau, FCC, Washington, DC 20554,
ater than 7 days following initi-
of space station transmissions.
notification must update the in-
ation contained in the pre-space
ication.

The licensee of each space station
give a written, post-space station
ication to the Private Radio
au, FCC, Washington, DC 20554,
ter than 3 months after termina-
of the space station transmissions.
n the termination is ordered by
FCC, notification is required no
than 24 hours after termination.

R 25857, June 20, 1989, as amended at
39535, Sept. 27, 1989]

9 Earth station.

Any amateur station may be an
station. A holder of any class
tor license may be the control
tor of an Earth station, subject
e privileges of the class of opera-
cense held by the control opera-

The following frequency bands
egments are authorized to Earth
ns:

(1) The 17 m, 15 m, 12 m, and 10 m bands, 6 mm, 4 mm, 2 mm and 1 mm bands; and

(2) The 7.0-7.1 MHz, 14.00-14.25 MHz, 144-146 MHz, 435-438 MHz, 1260-1270 MHz and 2400-2450 MHz, 3.40-3.41 GHz, 5.65-5.67 GHz, 10.45-10.50 GHz and 24.00-24.05 GHz segments.

[54 FR 25857, June 20, 1989, as amended at 54 FR 39535, Sept. 27, 1989]

§ 97.211 Telecommand station.

(a) Any amateur station designated by the licensee of a space station is eligible to transmit as a telecommand station for that space station, subject to the privileges of the class of operator license held by the control operator.

(b) A telecommand station may transmit special codes intended to obscure the meaning of telecommand messages to the station in space operation.

(c) The following frequency bands and segments are authorized to telecommand stations:

(1) The 17 m, 15 m, 12 m and 10 m bands, 6 mm, 4 mm, 2 mm and 1 mm bands; and

(2) The 7.0-7.1 MHz, 14.00-14.25 MHz, 144-146 MHz, 435-438 MHz, 1260-1270 MHz and 2400-2450 MHz, 3.40-3.41 GHz, 5.65-5.67 GHz, 10.45-10.50 GHz and 24.00-24.05 GHz segments.

(d) A telecommand station may transmit one-way communications.

[54 FR 25857, June 20, 1989, as amended at 54 FR 39535, Sept. 27, 1989]

§ 97.213 Remote control of a station.

An amateur station may be remotely controlled where:

(a) There is a radio or wireline control link between the control point and the station sufficient for the control operator to perform his/her duties. If radio, the control link must use an auxiliary station. A control link using a fiber optic cable or another telecommunication service is considered wireline.

(b) Provisions are incorporated to limit transmission by the station to a period of no more than 3 minutes in the event of malfunction in the control link.

(c) The station is protected against making, willfully or negligently, unauthorized transmissions.

(d) A photocopy of the station license and a label with the name, address, and telephone number of the station licensee and at least one designated control operator is posted in a conspicuous place at the station location.

§ 97.215 Remote control of model craft.

An amateur station transmitting signals to control a model craft may be operated as follows:

(a) The station identification procedure is not required for transmissions directed only to the model craft, provided that a label indicating the station call sign and the station licensee's name and address is affixed to the station transmitter.

(b) The control signals are not considered codes or ciphers intended to obscure the meaning of the communication.

(c) The transmitter power must not exceed 1 W.

Subpart D—Technical Standards

§ 97.301 Authorized frequency bands.

The following transmitting frequency bands are available to an amateur station located within 50 km of the Earth's surface, within the specified ITU Region, and outside any area where the amateur service is regulated by any authority other than the FCC.

(a) For a station having a control operator holding a Technician, General, Advanced or Amateur Extra Class operator license:

Wavelength band	ITU—Region 1	ITU—Region 2	ITU—Region 3	Sharing requirements see § 97.303 (Paragraph)
VHF	MHz	MHz	MHz	
6 m		50-54	50-54	(a)
2 m	144-146	144-148	144-148	(a)
1.25 m		220-225		(a), (b), (e)
UHF	MHz	MHz	MHz	
70 cm	430-440	420-450	420-450	(a), (b), (f)
33 cm		902-928		(a), (c), (g)
23 cm	1240-1300	1240-1300	124-1300	(j)
13 cm	2300-2310	2300-2310	2300-2310	(a), (b), (j)
do	2390-2450	2390-2450	2390-2450	(a), (b), (j)
SHF	GHz	GHz	GHz	
9 cm		3.3-3.5	3.3-.5	(a), (b), (k), (l)
5 cm	5.650-5.850	5.650-5.925	5.650-5.850	(a), (b), (m)
3 cm	10.00-10.50	10.00-10.50	10.00-10.50	(a), (c), (i), (n)
1.2 cm	24.00-24.25	24.00-24.25	24.00-24.25	(a), (b), (i), (o)
EHF	GHz	GHz	GHz	
6 mm	47.0-47.2	47.0-47.2	47.0-47.2	
4 mm	75.5-81.0	75.5-81.0	75.5-81.0	(b), (c), (h)
2.5 mm	119.98-120.02	119.98-120.02	119.98-120.02	(k), (p)
2 mm	142-149	142-149	142-149	(b), (c), (h), (k)
1 mm	241-250	241-250	241-250	(b), (c), (h), (k)
	above 300	above 300	above 300	(k)

(b) For a station having a control operator holding an Amateur Extra Class operator license:

Wavelength band	ITU—Region 1	ITU—Region 2	ITU—Region 3	Sharing requirements. See § 97.303 (Paragraph)
MF	kHz	kHz	kHz	
160 m	1810-1850	1800-2000	1800-2000	(a), (b), (c).
HF	MHz	MHz	MHz	
0 m	3.50-3.75	3.50-3.75	3.50-3.75	(a).
75 m	3.75-3.80	3.75-4.00	3.75-3.90	(a).
0 m	7.0-7.1	7.0-7.3	7.0-7.1	(a).
0 m	10.10-10.15	10.10-10.15	10.10-10.15	(d).
0 m	14.00-14.35	14.00-14.35	14.00-14.35	
7 m	18.068-18.168	18.068-18.168	18.068-18.168	
5 m	21.00-21.45	21.00-21.45	21.00-21.45	
2 m	24.89-24.99	24.89-24.99	24.89-24.99	
0 m	28.0-29.7	28.0-29.7	28.0-29.7	

(c) For a station having a control operator holding an Advanced Class operaor license:

Wavelength band	ITU—Region 1	ITU—Region 2	ITU—Region 3	Sharing requirements. See § 97.303, (Paragraph)
MF	kHz	kHz	kHz	
0 m	1810-1850	1800-2000	1800-2000	(a), (b), (c).
HF	MHz	MHz	MHz	
m	3.525-3.750	3.525-3.750	3.525-3.750	(a).
m	3.775-3.800	3.775-4.000	3.775-3.900	(a).
m	7.025-7.100	7.025-7.300	7.025-7.100	(a).
m	10.1u-10.15	10.10-10.15	10.10-10.15	(d).
m	14.025-14.150	14.025-14.150	14.025-14.150	
Do	14.175-14.350	14.175-14.350	14.175-14.350	
m	18.068-18.168	18.068-18.168	18.068-18.168	
m	21.025-21.200	21.025-21.200	21.025-21.200	
Do	21.225-21.450	21.225-21.450	21.225-21.450	
m	24.89-24.99	24.89-24.99	24.89-24.99	
m	28.0-29.7	28.0-29.7	28.0-29.7	

(d) For a station having a control operator holding a General Class operator ense:

Wavelength band	ITU-Region 1	ITU-Region 2	ITU-Region 3	Sharing requirements. See § 97.303 (Paragraph)
MF	kHz	kHz	kHz	
m	1810-1850	1800-2000	1800-2000	(a), (b), (c).
HF	MHz	MHz	MHz	
	3.525-3.750	3.525-3.750	3.525-3.750	(a).
		3.85-4.00	3.85-3.90	(a).
	7.025-7.100	7.025-7.150	7.025-7.100	(a).
Do		7.225-7.300		(a).
	10.10-10.15	10.10-10.15	10.10-10.15	(d).
	14.025-14.150	14.025-14.150	14.025-14.150	
Do	14.225-14.350	14.225-14.350	14.225-14.350	
	18.068-18.168	18.068-18.168	18.068-18.168	

Wavelength band	ITU-Region 1	ITU-Region 2	ITU-Region 3	Sharing requirements. See § 97.303 (Paragraph)
15 m	21.025-21.200	21.025-21.200	21.025-21.200	
Do	21.30-21.45	21.30-21.45	21.30-21.45	
12 m	24.89-24.99	24.89-24.99	24.89-24.99	
10 m	28.0-29.7	28.0-29.7	28.0-29.7	

(e) For a station having a control operator holding a Technician or Novice Class operator license:

Wavelength band	ITU—Region 1	ITU—Region 2	ITU—Region 3	Sharing requirements. See § 97.303 (Paragraph)
HF	MHz	MHz	MHz	
80 m	3.70-3.75	3.70-3.75	3.70-3.75	(a)
40 m	7.050-7.075	7.10-7.15	7.050-7.075	(a)
15 m	21.10-21.20	21.10-21.20	21.10-21.20	
10 m	28.1-28.5	28.1-28.5	28.1-28.5	

(f) For a station having a control operator holding a Novice Class operator license:

Wavelength band	ITU-Region 1	ITU-Region 2	ITU-Region 3	Sharing requirements. See § 97.303 (Paragraph)
VHF	MHz	MHz	MHz	
1.25 m		222.10-223.91		(a), (b), (e)
UHF	MHz	MHz	MHz	
23 cm	1270-1295	1270-1295	1270-1295	(i)

[54 FR 25857, June 20, 1989; 54 FR 39535, Sept. 27, 1989, as amended at 55 FR 30457, July 26, 1990]

§ 97.303 Frequency sharing requirements.

The following is a summary of the frequency sharing requirements that apply to amateur station transmissions on the frequency bands specified in § 97.301 of this part. (For each ITU Region, each frequency band allocated to the amateur service is designated as either a secondary service or a primary service. A station in a secondary service must not cause harmful interference to, and must accept interference from, stations in a primary service. See §§ 2.105 and 2.106 of the FCC Rules, *United States Table of Frequency Allocations* for complete requirements.)

(a) Where, in adjacent ITU Regions or Subregions, a band of frequencies is allocated to different services of the same category, the basic principle is the equality of right to operate. The stations of each service in one region must operate so as not to cause harmful interference to services in the other Regions or Subregions. (See ITU *Radio Regulations*, No. 346 (Geneva, 1979).)

(b) No amateur station transmitting in the 1900-2000 kHz segment, the 1.25 m band, the 70 cm band, the 33 cm band, the 13 cm band, the 9 cm band, the 5 cm band, the 3 cm band, the 24.05-24.25 GHz segment, the 76-81 GHz segment, the 144-149 GHz segment and the 241-248 GHz segment shall cause harmful interference to, nor is protected from interference due to the operation of, the Government radiolocation service.

(c) No amateur station transmitting in the 19[illegible]2000 kHz segment, the 3 cm band, the 76–81 GHz segment, the 144-149 GHz segment and the 241–248 GHz segment shall cause harmful interference to, nor is protected from interference due to the operation of, stations in the non-Government radiolocation service.

(d) No amateur station transmitting n the 30 meter band shall cause harm- ul interference to stations authorized y other nations in the fixed service. he licensee of the amateur station ust make all necessary adjustments, ncluding termination of transmis- ons, if harmful interference is aused.

(e) The 1.25 m band is allocated to e amateur, fixed and mobile services the United States on a co-primary sis. The basic principle that applies the equality of right to operate. mateur, fixed and mobile stations ust operate so as not to cause harm- l interference to each other.

f) In the 70 cm band:

1) No amateur station shall trans- t from north of Line A in the 420- MHz segment.

2) The 420–430 MHz segment is allo- ed to the amateur service in the ited States on a secondary basis, l is allocated in the fixed and bile (except aeronautical mobile) vices in the International Table of cations on a primary basis. No teur station transmitting in this d shall cause harmful interference nor is protected from interference to the operation of, stations au- ized by other nations in the fixed mobile (except aeronautical ile) services.

The 430–440 MHz segment is allo- d to the amateur service on a sec- ry basis in ITU Regions 2 and 3. amateur station transmitting in band in ITU Regions 2 and 3 shall harmful interference to, nor is cted from interference due to the ation of, stations authorized by nations in the radiolocation e. In ITU Region 1, the 430–440 segment is allocated to the ama- service on a co-primary basis with adiolocation service. As between two services in this band in ITU n 1, the basic principle that applies is the equality of right to operate. Amateur stations authorized by the United States and radiolocation stations authorized by other nations in ITU Region 1 shall operate so as not to cause harmful interference to each other.

(4) No amateur station transmitting in the 449.75–450.25 MHz segment shall cause interference to, nor is protected from itnerference due to the operation of stations in, the space operation service and the space research service or Government or non-Government stations for space telecommand.

(g) In the 33 cm band:

(1) No amateur station shall transmit from within the States of Colorado and Wyoming, bounded on the south by latitude 39°N., on the north by latitude 42°N., on the east by longitude 105°W., and on the west by longitude 108°W. This band is allocated on a secondary basis to the amateur service subject to not causing harmful interference to, and not receiving protection from any interference due to the operation of, industrial, scientific and medical devices, automatic vehicle monitoring systems or Government stations authorized in this band.

(2) No amateur station shall transmit from those portions of the States of Texas and New Mexico bounded on the south by latitude 31°41′N., on the north by latitude 34°30′N., on the east by longitude 104°11′W., and on the west by longitude 107°30′W.

(h) No amatuer station transmitting in the 23 cm band, the 3 cm band, the 24.05–24.25 GHz segment, the 76–81 GHz segment, the 144–149 GHz segment and the 241–248 GHz segment shall cause harmful interference to, nor is protected from interference due to the operation of, stations authorized by other nations in the radiolocation service.

(i) In the 1240–1260 MHz segment, no amateur station shall cause harmful interference to, nor is protected from interference due to the operation of, stations in the radionavigation-satellite service.

(j) In the 13 cm band:

(1) The amateur service is allocated on a secondary basis in all ITU Regions. In ITU Region 1, no amateur station shall cause harmful interfer-

ence to, and is not protected from interference due to the operation of, stations authorized by other nations in the fixed service. In ITU Regions 2 and 3, no station shall cause harmful interference to, and is not protected from interference due to the operation of, stations authorized by other nations in the fixed, mobile and radiolocation services.

(2) In the United States, 2300-2310 MHz segment is allocated to the amateur service on a co-secondary basis with the Government fixed and mobile services. In this segment, the fixed and mobile services must not cause harmful interference to the amateur service. No amateur station transmitting in the 2400-2450 MHz segment is protected from interference due to the operation of industrial, scientific and medical devices on 2450 MHz.

(k) No amateur station transmitting in the 3.332-3.339 GHz and 3.3458-3525 GHz segments, the 2.5 mm band, the 144.68-144.98 GHz, 145.45-145.75 GHz and 146.82-147.12 GHz segments and the 343-348 GHz segment shall cause harmful interference to stations in the radio astronomy service. No amateur station transmitting in the 300-302 GHz, 324-326 GHz, 345-347 GHz, 363-365 GHz and 379-381 GHz segments shall cause harmful interference to stations in the space research service (passive) or Earth exploration-satellite service (passive).

(l) In the 9 cm band:

(1) In ITU Regions 2 and 3, the band is allocated to the amateur service on a secondary basis.

(2) In the United States, the band is allocated to the amateur service on a co-secondary basis with the non-Government radiolocation service.

(3) In the 3.3-3.4 GHz segment, no amateur station shall cause harmful interference to, nor is protected from interference due to the operation of, stations authorized by other nations in the radiolocation service.

(4) In the 3.4-3.5 GHz segment, no amateur station shall cause harmful interference to, nor is protected from interference due to the operation of, stations authorized by other nations in the fixed and fixed-satellite service.

(m) In the 5 cm band:

(1) In the 5.650-5.725 GHz se
the amateur service is allocate
ITU Regions on a co-secondar
with the space research (deep
service.

(2) In the 5.725-5.850 GHz se
the amateur service is allocate
ITU Regions on a secondary ba
amateur station shall cause h
interference to, nor is protecte
interference due to the operat
stations authorized by other nat
the fixed-satellite service in
Region 1.

(3) No amateur station transı
in the 5.725-5.875 GHz segment
tected from interference due
operation of industrial, scienti
medical devices operating on 5.

(4) In the 5.650-5.850 GHz se
no amateur station shall cause
ful interference to, nor is pr
from interference due to the op
of, stations authorized by oth
tions in the radiolocation servic

(5) In the 5.850-5.925 GHz se
the amateur service is allocated
Region 2 on a co-secondary bas
the radiolocation service. I
United States, the segment is all
to the amateur service on a sec
basis to the non-Government
satellite service. No amateur
shall cause harmful interferen
nor is protected from interferen
to the operation of, stations a
ized by other nations in the
fixed-satellite and mobile servic
amateur station shall cause h
interference to, nor is protecte
interference due to the operat
stations in the non-Government
satellite service.

(n) In the 3 cm band:

(1) In the United States, the
band is allocated to the amateu
ice on a co-secondary basis wit
non-government radiolocation se

(2) In the 10.00-10.45 GHz se
in ITU Regions 1 and 3, no an
station shall cause interference
is protected from interference
the operation of, stations auth
by other nations in the fixe
mobile services.

(o) No amateur station transm
in the 1.2 cm band is protected
interference due to the operat
industrial, scientific and medic

vices on 24.125 GHz. In the United States, the 24.05–24.25 GHz segment is allocated to the amateur service on a co-secondary basis with the non-government radiolocation and Government and non-government Earth exploration-satellite (active) services.

(p) The 2.5 mm band is allocated to the amateur service on a secondary basis. No amateur station transmitting in this band shall cause harmful interference to, nor is protected from interference due to the operation of stations in the fixed, inter-satellite and mobile services.

(q) No amateur station transmitting in the 244–246 GHz segment of the 1 mm band is protected from interference due to the operation of industrial, scientific and medical devices on 245 GHz.

[54 FR 25857, June 20, 1989; 54 FR 39536, Sept. 27, 1989]

§ 97.305 Authorized emission types.

(a) An amateur station may transmit a CW emission on any frequency authorized to the control operator.

(b) A station may transmit a test emission on any frequency authorized to the control operator for brief periods for experimental purposes, except that no pulse modulation emission may be transmitted on any frequency where pulse is not specifically authorized.

(c) A station may transmit the following emission types on the frequencies indicated, as authorized to the control operator, subject to the standards specified in § 97.307(f) of this part.

Wavelength band	Frequencies	Emission types authorized	Standards see § 97.307(f), paragraph:
MF:			
160 m	Entire band	RTTY, data	(3).
160 m	Entire band	Phone, image	(1), (2).
HF:			
80 m	Entire band	RTTY, data	(3), (9).
75 m	Entire band	Phone, image	(1), (2).
40 m	7.000–7.100 MHz	RTTY, data	(3), (9).
40 m	7.075–7.100 MHz	Phone, image	(1), (2), (9), (11).
40 m	7.100–7.150 MHz	RTTY, data	(3), (9).
40 m	7.150–7.300 MHz	Phone, image	(1), (2).
30 m	Entire band	RTTY, data	(3).
20 m	14.00–14.15 MHz	RTTY, data	(3).
20 m	14.15–14.35 MHz	Phone, image	(1), (2).
17 m	18.068–18.110 MHz	RTTY, data	(3)
17 m	18.110–18.168 MHz	Phone, image	(1), (2).
15 m	21.0–21.2 MHz	RTTY, data	(3), (9).
15 m	21.20–21.45 MHz	Phone, image	(1), (2).
12 m	24.89–24.93 MHz	RTTY, data	(3).
12 m	24.93–24.99 MHz	Phone, image	(1), (2).
10 m	28.0–28.3 MHz	RTTY, data	(4).
10 m	28.3–28.5 MHz	Phone, image	(1), (2), (10).
10 m	28.5–29.0 MHz	Phone, image	(1), (2).
10 m	29.0–29.7 MHz	Phone, image	(2).
VHF:			
6 m	50.1–51.0 MHz	MCW, phone, image, RTTY, data	(2), (5).
Do	51.0–54.0 MHz	MCW, phone, image, RTTY, data, test.	(2), (5), (8).
2 m	144.1–148.0 MHz	MCW, phone, image, RTTY, data, test.	(2), (5), (8).
1.25 m	Entire band	MCW, phone, image, RTTY, data, test.	(2), (6), (8).
UHF:			
70 cm	Entire band	MCW, phone, image, RTTY, data, SS, test.	(6), (8).
33 cm	Entire band	MCW, phone, image, RTTY, data, SS, test, pulse.	(7), (8), and (12).
23 cm	Entire band	MCW, phone, image, RTTY, data, SS, test.	(7), (8), and (12).
13 cm	Entire band	MCW, phone, image, RTTY, data, SS, test, pulse.	(7), (8), and (12).

Wave-length band	Frequencies	Emission types authorized	Standards see § 97.3 paragraph:
SHF:			
9 cm	Entire band	MCW, phone, image, RTTY, data, SS, test, pulse.	(7), (8), and (12)
5 cm	Entire band	MCW, phone, image, RTTY, data, SS, test, pulse.	(7), (8), and (12)
3 cm	Entire band	MCW, phone, image, RTTY, data, SS, test.	(7), (8), and (12)
1.2 cm	Entire band	MCW, phone, image, RTTY, data, SS, test, pulse.	(7), (8), and (12)
EHF:			
6 mm	Entire band	MCW, phone, image, RTTY, data, SS, test, pulse.	(7), (8), and (12)
4 mm	Entire band	MCW, phone, image, RTTY, data, SS, test, pulse.	(7), (8), and (12)
2.5 mm	Entire band	MCW, phone, image, RTTY, data, SS, test, pulse.	(7), (8), and (12)
2 mm	Entire band	MCW, phone, image, RTTY, data, SS, test, pulse.	(7), (8), and (12)
1mm	Entire band	MCW, phone, image, RTTY, data, SS, test, pulse.	(7), (8), and (12)
—	Above 300 GHz	MCW, phone, image, RTTY, data, SS, test, pulse.	(7), (8), and (12)

[54 FR 25857, June 20, 1989; 54 FR 39536, Sept. 27, 1989; 55 FR 22013, May 30, 1990, as amended at 55 FR 30457, July 26, 1990]

§ 97.307 Emission standards.

(a) No amateur station transmission shall occupy more bandwidth than necessary for the information rate and emission type being transmitted, in accordance with good amateur practice.

(b) Emissions resulting from modulation must be confined to the band or segment available to the control operator. Emissions outside the necessary bandwidth must not cause splatter or keyclick interference to operations on adjacent frequencies.

(c) All spurious emissions from a station transmitter must be reduced to the greatest extent practicable. If any spurious emission, including chassis or power line radiation, causes harmful interference to the reception of another radio station, the licensee of the interfering amateur station is required to take steps to eliminate the interference, in accordance with good engineering practice.

(d) The mean power of any spurious emission from a station transmitter or external RF power amplifier transmitting on a frequency below 30 MHz must not exceed 50 mW and must be at least 40 dB below the mean power of the fundamental emission. For a transmitter of mean power less than 5
W, the attenuation must be at lea
dB. A transmitter built before
15, 1977, or first marketed before
uary 1, 1978, is exempt from thi
quirement.

(e) The mean power of any spu
emission from a station transmitt
external RF power amplifier trans
ting on a frequency between 30
MHz must be at least 60 dB below
mean power of the fundamental. F
transmitter having a mean power
W or less, the mean power of any
rious emission supplied to the ante
transmission line must not excee
μW and must be at least 40 dB be
the mean power of the fundame
emission, but need not be redu
below the power of 10 μW. A trans
ter built before April 15, 1977, or
marketed before January 1, 1978
exempt from this requirement.

(f) The following standards and li
tations apply to transmissions on
frequencies specified in § 97.305(c)
this part.

(1) No angle-modulated emiss
may have a modulation index grea
than 1 at the highest modulation
quency.

(2) No non-phone emission sh
exceed the bandwidth of a commu
cations quality phone emission of
same modulation type. The total ba
width of an independent sideba
emission (having B as the fi

symbol), or a multiplexed image and phone emission, shall not exceed that of a communications quality A3E emission.

(3) Only a RTTY or data emission using a specified digital code listed in § 97.309(a) of this part may be transmitted. The symbol rate must not exceed 300 bauds, or for frequency-shift keying, the frequency shift between mark and space must not exceed 1 kHz.

(4) Only a RTTY or data emission using a specified digital code listed in § 97.309(a) of this part may be transmitted. The symbol rate must not exceed 1200 bauds, or for frequency-shift keying, the frequency shift between mark and space must not exceed 1 kHz.

(5) A RTTY, data or multiplexed emission using a specified digital code listed in § 97.309(a) of this part may be transmitted. The symbol rate must not exceed 19.6 kilobauds. A RTTY, data or multiplexed emission using an unspecified digital code under the limitations listed in § 97.309(b) of this part also may be transmitted. The authorized bandwidth is 20 kHz.

(6) A RTTY, data or multiplexed emission using a specified digital code listed in § 97.309(a) of this part may be transmitted. The symbol rate must not exceed 56 kilobauds. A RTTY, data or multiplexed emission using an unspecified digital code under the limitations listed in § 97.309(b) of this part also may be transmitted. The authorized bandwidth is 100 kHz.

(7) A RTTY, data or multiplexed emission using a specified digital code listed in § 97.309(a) of this part or an unspecified digital code under the limitations listed in § 97.309(b) of this part may be transmitted.

(8) A RTTY or data emission having designators with A, B, C, D, E, F, G, H, J or R as the first symbol; 1, 2, 7 or 9 as the second symbol; and D or W as the third symbol is also authorized.

(9) A station having a control operator holding a Novice or Technician Class operator license may only transmit a CW emission using the international Morse code.

(10) A station having a control operator holding a Novice or Technician Class operator license may only transmit a CW emission using the international Morse code or phone emissions J3E and R3E.

(11) Phone and image emissions may be transmitted only by stations located in ITU Regions 1 and 3, and by stations located within ITU Region 2 that are west of 130° West longitude or south of 20° North latitude.

(12) Emission F8E may be transmitted.

[54 FR 25857, June 20, 1989; 54 FR 30823, July 24, 1989, as amended at 54 FR 39537, Sept. 27, 1989]

§ 97.309 RTTY and data emission codes.

(a) Where authorized by §§ 97.305(c) and 97.307(f) of this part, an amateur station may transmit a RTTY or data emission using the following specified digital codes:

(1) The 5-unit, start-stop, International Telegraphs Alphabet No. 2 code, defined in International Telegraph and Telephone Consultative Committee Recommendation F.1, Division C.

(2) The 7-unit code, specified in International Radio Consultative Committee Recommendation CCIR 476-2 (1978), 476-3 (1982), 476-4 (1986) or 625 (1986).

(3) The 7-unit code, defined in American National Standards Institute X3.4-1977 or International Alphabet No. 5, defined in International Telegraph and Telephone Consultative Committee Recommendation T.50 or in International Organization for Standardization, International Standard ISO 646 (1983), and extensions as provided for in CCITT Recommendation T.61 (Malaga-Torremolinos, 1984).

(b) Where authorized by §§ 97.305(c) and 97.307(f) of this part, a station may transmit a RTTY or data emission using an unspecified digital code, except to a station in a country with which the United States does not have an agreement permitting the code to be used. RTTY and data emissions using unspecified digital codes must not be transmitted for the purpose of obscuring the meaning of any communication. When deemed necessary by an EIC to assure compliance with the FCC Rules, a station must:

(1) Cease the transmission using the unspecified digital code;

(2) Restrict transmissions of any digital code to the extent instructed;

(3) Maintain a record, convertible to the original information, of all digital communications transmitted.

[54 FR 25857, June 20, 1989, as amended at 54 FR 39537, Sept. 27, 1989]

§ 97.311 SS emission types.

(a) SS emission transmissions by an amateur station are authorized only for communications between points within areas where the amateur service is regulated by the FCC. SS emission transmissions must not be used for the purpose of obscuring the meaning of any communication.

(b) Stations transmitting SS emission must not cause harmful interference to stations employing other authorized emissions, and must accept all interference caused by stations employing other authorized emissions. For the purposes of this paragraph, unintended triggering of carrier operated repeaters is not considered to be harmful interference.

(c) Only the following types of SS emission transmissions are authorized (hybrid SS emissions transmissions involving both spreading techniques are prohibited):

(1) Frequency hopping where the carrier of the transmitted signal is modulated with unciphered information and changes frequency at fixed intervals under the direction of a high speed code sequence.

(2) Direct sequence where the information is modulo-2 added to a high speed code sequence. The combined information and code are then used to modulate the RF carrier. The high speed code sequence dominates the modulation function, and is the direct cause of the wide spreading of the transmitted signal.

(d) The only spreading sequences that are authorized are from the output of one binary linear feedback shift register (which may be implemented in hardware or software).

(1) Only the following sets of connections may be used:

Number of stages in shift register	Taps used in feedback
7	7,1.
13	13,4, 3, and 1.
19	19, 5, 2, and 1.

(2) The shift register must not be reset other than by its feedback during an individual transmission. The shift register output sequence must be used without alteration.

(3) The output of the last stage of the binary linear feedback shift register must be used as follows:

(i) For frequency hopping transmissions using x frequencies, n consecutive bits from the shift register must be used to select the next frequency from a list of frequencies sorted in ascending order. Each consecutive frequency must be selected by a consecutive block of n bits. (Where n is the smallest integer greater than $\log_2 x$.)

(ii) For direct sequence transmissions using m-ary modulation, consecutive blocks of $\log_2 m$ bits from the shift register must be used to select the transmitted signal during each interval.

(e) The station records must document all SS emission transmissions and must be retained for a period of 1 year following the last entry. The station records must include sufficient information to enable the FCC, using the information contained therein, to demodulate all transmissions. The station records must contain at least the following:

(1) A technical description of the transmitted signal;

(2) Pertinent parameters describing the transmitted signal including the frequency or frequencies of operation and, where applicable, the chip rate, the code rate, the spreading function, the transmission protocol(s) including the method of achieving sychronization, and the modulation type;

(3) A general description of the type of information being conveyed, (voice, text, memory dump, facsimile, television, etc.);

(4) The method and, if applicable, the frequency or frequencies used for station identification; and

(5) The date of beginning and the date of ending use of each type of transmitted signal.

(f) When deemed necessary by an EIC to assure compliance with this part, a station licensee must:

(1) Cease SS emission transmissions;

(2) Restrict SS emission transmissions to the extent instructed; and

(3) Maintain a record, convertible to the original information (voice, text, image, etc.) of all spread spectrum communications transmitted.

(g) The transmitter power must not exceed 100 W.

§ 97.313 Transmitter power standards.

(a) An amateur station must use the minimum transmitter power necessary to carry out the desired communications.

(b) No station may transmit with a transmitter power exceeding 1.5 kW PEP. Until June 2, 1990, a station transmitting emission A3E is exempt from this requirement provided the power input (both RF and direct cur- ent) to the final amplifying stage sup- plying RF power to the antenna feed ine does not exceed 1 kW, exclusive of ower for heating the cathodes of acuum tubes.

(c) No station may transmit with a ansmitter power exceeding 200 W EP on:

(1) The 3.70-3.75 MHz, 7.10-7.15 Hz, 10.10-10.15 MHz and 21.1-21.2 Hz segments;

(2) The 28.1-28.5 MHz segment when e control operator is a Novice or chnician operator; or

3) The 7.050-7.075 MHz segment en the station is within ITU Re- ns 1 or 3.

d) No station may transmit with a nsmitter power exceeding 25 W P on the VHF 1.25 m band when control operator is a Novice opera-

) No station may transmit with a nsmitter power exceeding 5 W PEP he UHF 23 cm band when the con- operator is a Novice operator.

No station may transmit with a smitter power exceeding 50 W on the UHF 70 cm band from an specified in footnote US7 to 06 of the FCC Rules, unless ex- sly authorized by the FCC after mutual agreement, on a case-by-case basis, between the EIC of the applicable field facility and the military area frequency coordinator at the applicable military base. An Earth station or telecommand station, however, may transmit on the 435-438 MHz segment with a maximum of 611 W effective radiated power (1 kW equivalent isotropically radiated power) without the authorization otherwise required. The transmitting antenna elevation angle between the lower half-power (−3 dB relative to the peak or antenna bore sight) point and the horizon must always be greater than 10°.

(g) No station may transmit with a transmitter power exceeding 50 W PEP on the 33 cm band from within 241 km of the boundaries of the White Sands Missile Range. Its boundaries are those portions of Texas and New Mexico bounded on the south by latitude 31° 41′ North, on the east by longitude 104° 11′ West, on the north by latitude 34° 30′ North, and on the west by longitude 107° 30′ West.

§ 97.315 Type acceptance of external RF power amplifiers.

(a) No more than 1 unit of 1 model of an external RF power amplifier capable of operation below 144 MHz may be constructed or modified during any calendar year by an amateur operator for use at a station without a grant of type acceptance. No amplifier capable of operation below 144 HMz may be constructed or modified by a non-amateur operator without a grant of type acceptance from the FCC.

(b) Any external RF power amplifier or external RF power amplifier kit (see § 2.815 of the FCC Rules), manufactured, imported or modified for use in a station or attached at any station must be type accepted for use in the amateur service in accordance with subpart J of part 2 of the FCC Rules. This requirement does not apply if one or more of the following conditions are met:

(1) The amplifier is not capable of operation on frequencies below 144 HMz. For the purpose of this part, an amplifier will be deemed to be incapable of operation below 144 HMz if it is not capable of being easily modified to

increase its amplification characteristics below 120 MHz and either:

(i) The mean output power of the amplifier decreases, as frequency decreases from 144 HMz, to a point where 0 dB or less gain is exhibited at 120 MHz; or

(ii) The amplifier is not capable of amplifying signals below 120 MHz even for brief periods without sustaining permanent damage to its amplification circuitry.

(2) The amplifier was manufactured before April 28, 1978, and has been issued a marketing waiver by the FCC, or the amplifier was purchased before April 28, 1978, by an amateur operator for use at that amateur operator's station.

(3) The amplifier was:

(i) Constructed by the licensee, not from an external RF power amplifier kit, for use at the licensee's station; or

(ii) Modified by the licensee for use at the licensee's station.

(4) The amplifier is sold by an amateur operator to another amateur operator or to a dealer.

(5) The amplifier is purchased in used condition by an equipment dealer from an amateur operator and the amplifier is further sold to another amateur operator for use at that operator's station.

(c) A list of type accepted equipment may be inspected at FCC headquarters in Washington, DC, or at any FCC field location. Any external RF power amplifier appearing on this list as type accepted for use in the amateur service may be marketed for use in the amateur service.

§ 97.317 Standards for type acceptance of external RF power amplifiers.

(a) To receive a grant of type acceptance, the amplifier must satisfy the spurious emission standards of § 97.307(d) or (e) of this part, as applicable, when the amplifier is:

(1) Operated at its full output power;

(2) Placed in the "standby" or "off" positions, but still connected to the transmitter; and

(3) Driven with at least 50 W mean RF input power (unless higher drive level is specified.)

(b) To receive a grant of type acceptance, the amplifier must not be capable of operation on any frequency o frequencies between 24 MHz and 3 MHz. The amplifier will be deemed incapable of such operation if it:

(1) Exhibits no more than 6 dB gai between 24 MHz and 26 MHz and between 28 MHz and 35 MHz. (This gai will be determined by the ratio of th input RF driving signal (mean powe measurement) to the mean RF outpu power of the amplifier); and

(2) Exhibits no amplification (0 dB gain) between 26 MHz and 28 MHz.

(c) Type acceptance may be denied when denial would prevent the use of these amplifiers in services other than the amateur service. The following features will result in dismissal or denial of an application for type acceptance:

(1) Any accessible wiring which, when altered, would permit operation of the amplifier in a manner contrary to the FCC Rules;

(2) Circuit boards or similar circuitry to facilitate the addition of components to change the amplifier's operating characteristics in a manner contrary to the FCC Rules;

(3) Instructions for operation or modification of the amplifier in a manner contrary to FCC Rules;

(4) Any internal or external controls or adjustments to facilitate operation of the amplifier in a manner contrary to the FCC Rules;

(5) Any internal RF sensing circuitry or any external switch, the purpose of which is to place the amplifier in the transmit mode;

(6) The incorporation of more gain in the amplifier than is necessary to operate in the amateur service; for purposes of this paragraph, the amplifer must:

(i) Not be capable of achieving designed output power when driven with less than 50 W mean RF input power;

(ii) Not be capable of amplifying the input RF driving signal by more than 15 dB, unless the amplifier has a designed transmitter power of less than 1.5 kW (in such a case, gain must be reduced by the same number of dB as the transmitter power relationship to 1.5 kW; This gain limitation is determined by the ratio of the input RF driving signal to the RF output power of the amplifier where both signals are expressed in peak envelope power or mean power);

(iii) Not exhibit more gain than permitted by paragraph (c)(6)(ii) of this section when driven by an RF input signal of less than 50 W mean power; and

(iv) Be capable of sustained operation at its designed power level;

(7) Any attenuation in the input of the amplifier which, when removed or modified, would permit the amplifier to function at its designed transmitter power when driven by an RF frequency input signal of less than 50 W mean power; or

(8) Any other features designed to facilitate operation in a telecommunication service other than the Amateur Radio Services, such as the Citizens Band (CB) Radio Service.

Subpart E—Providing Emergency Communications

§ 97.401 Operation during a disaster.

(a) When normal communication systems are overloaded, damaged or disrupted because a disaster has occurred, or is likely to occur, in an area where the amateur service is regulated by the FCC, an amateur station may make transmissions necessary to meet essential communication needs and facilitate relief actions.

(b) When normal communication systems are overloaded, damaged or disrupted because a natural disaster has occurred, or is likely to occur, in an area where the amateur service is not regulated by the FCC, a station assisting in meeting essential communication needs and facilitating relief actions may do so only in accord with ITU Resolution No. 640 (Geneva, 1979). The 80 m, 75 m, 40 m, 30 m, 20 m, 17 m, 15 m, 12 m, and 2 m bands may be used for these purposes.

(c) When a disaster disrupts normal communication systems in a particular area, the FCC may declare a temporary state of communication emergency. The declaration will set forth any special conditions and special rules to be observed by stations during the communication emergency. A request for a declaration of a temporary state of emergency should be directed to the EIC in the area concerned.

(d) A station in, or within 92.6 km of, Alaska may transmit emissions J3E and R3E on the channel at 5.1675 Mhz for emergency communications. The channel must be shared with stations licensed in the Alaska-private fixed service. The transmitter power must not exceed 150 W.

§ 97.403 Safety of life and protection of property.

No provision of these rules prevents the use by an amateur station of any means of radiocommunication at its disposal to provide essential communication needs in connection with the immediate safety of human life and immediate protection of property when normal communication systems are not available.

§ 97.405 Station in distress.

(a) No provision of these rules prevents the use by an amateur station in distress of any means at its disposal to attract attention, make known its condition and location, and obtain assistance.

(b) No provision of these rules prevents the use by a station, in the exceptional circumstances described in paragraph (a) of this section, of any means of radiocommunications at its disposal to assist a station in distress.

§ 97.407 Radio amateur civil emergency service.

(a) No station may transmit in RACES unless it is an FCC-licensed primary, club, or military recreation station and it is certified by a civil defense organization as registered with that organization, or it is an FCC-licensed RACES station. No person may be the control operator of a RACES station, or may be the control operator of an amateur station transmitting in RACES unless that person holds a FCC-issued amateur operator license and is certified by a civil defense organization as enrolled in that organization.

(b) The frequency bands and segments and emissions authorized to the control operator are available to stations transmitting communications in

pages tightly bound

RACES on a shared basis with the amateur service. In the event of an emergency which necessitates the invoking of the President's War Emergency Powers under the provisions of Section 706 of the Communications Act of 1934, as amended, 47 U.S.C. 606, RACES stations and amateur stations participating in RACES may only transmit on the following frequencies:

(1) The 1800-1825 kHz, 1975-2000 kHz, 3.50-3.55 MHz, 3.93-3.98 MHz, 3.984-4.000 MHz, 7.079-7.125 MHz, 7.245-7.255 MHz, 10.10-10.15 MHz, 14.047-14.053 MHz, 14.22-14.23 MHz, 14.331-14.350 MHz, 21.047-21.053 MHz, 21.228-21.267 MHz, 28.55-28.75 MHz, 29.237-29.273 MHz, 29.45-29.65 MHz, 50.35-50.75 MHz, 52-54 MHz, 144.50-145.71 MHz, 146-148 MHz, 2390-2450 MHz segments;

(2) The 1.25 m, 70 cm and 23 cm bands; and

(3) The channels at 3.997 MHz and 53.30 MHz may be used in emergency areas when required to make initial contact with a military unit and for communications with military stations on matters requiring coordination.

(c) A RACES station may only communicate with:

(1) Another RACES station;

(2) An amateur station registered with a civil defense organization;

(3) A United States Government station authorized by the responsible agency to communicate with RACES stations;

(4) A station in a service regulated by the FCC whenever such communication is authorized by the FCC.

(d) An amateur station registered with a civil defense organization may only communicate with:

(1) A RACES station licensed to the civil defense organization with which the amateur station is registered;

(2) The following stations upon authorization of the responsible civil defense official for the organization with which the amateur station is registered:

(i) A RACES station licensed to another civil defense organization;

(ii) An amateur station registered with the same or another civil defense organization;

(iii) A United States Government station authorized by the responsible agency to communicate with RACI stations; and

(iv) A station in a service regulat by the FCC whenever such commun cation is authorized by the FCC.

(e) All communications transmitt in RACES must be specifically autho ized by the civil defense organizatio for the area served. Only civil defen communications of the following typ may be transmitted:

(1) Messages concerning impendi or actual conditions jeopardizing th public safety, or affecting the nation defense or security during periods local, regional, or national civil eme gencies;

(2) Messages directly concerning th immediate safety of life of individual the immediate protection of property maintenance of law and order, allev ation of human suffering and need and the combating of armed attack o sabotage;

(3) Messages directly concerning the accumulation and dissemination o public information or instructions t the civilian population essential to the activities of the civil defense organization or other authorized governmenta or relief agencies; and

(4) Communications for RACES training drills and tests necessary to ensure the establishment and maintenance of orderly and efficient operation of the RACES as ordered by the responsible civil defense organization served. Such drills and tests may not exceed a total time of 1 hour per week. With the approval of the chief officer for emergency planning in the applicable State, Commonwealth, District or territory, however, such tests and drills may be conducted for a period not to exceed 72 hours no more than twice in any calendar year.

Subpart F—Qualifying Examination Systems

§ 97.501 Qualifying for an amateur operator license.

An applicant must successfully pass an examination for the issuance of a new amateur operator license and for each change in operator class. Each applicant for the class of operator license specified below must pass, or otherwise receive examination credit for, the following examination elements:

(a) Amateur Extra Class operator: Elements 1(C), 2, 3(A), 3(B), 4(A), and 4(B);

(b) Advanced Class operator: Elements 1(B) or 1(C), 2, 3(A), 3(B), and 4(A);

(c) General Class operator: Elements 1(B) or 1(C), 2, 3(A), and 3(B);

(d) Technician Class operator: Elements 1(A) or 1(B) or 1(C), 2, and 3(A);

(e) Novice Class operator: Elements 1(A) or 1(B) or 1(C), and 2.

§ 97.503 Element standards.

(a) A telegraphy examination must be sufficient to prove that the examinee has the ability to send correctly by hand and to receive correctly by ear texts in the international Morse code at not less than the prescribed speed, using all the letters of the alphabet, numerals 0-9, period, comma, question mark, slant mark and prosigns ar, bt, and sk.

(1) Element 1(A): 5 words per minute;

(2) Element 1(B): 13 words per minute;

(3) Element 1(C): 20 words per minute.

(b) A written examination must be such as to prove that the examinee possesses the operational and technical qualifications required to perform properly the duties of an amateur service licensee. Each written examination must be comprised of a question set as follows:

(1) Element 2: 30 questions concerning the privileges of a Novice Class operator license. The minimum passing score is 22 questions answered correctly.

(2) Element 3(A): 25 questions concerning the additional privileges of a Technician Class operator license. The minimum passing score is 19 questions answered correctly.

(3) Element 3(B): 25 questions concerning the additional privileges of a General Class operator license. The minimum passing score is 19 questions answered correctly.

(4) Element 4(A): 50 questions concerning the additional privileges of an Advanced Class operator license. The minimum passing score is 37 questions answered correctly.

(5) Element 4(B): 40 questions concerning the additional privileges of an Amateur Extra Class operator license. The minimum passing score is 30 questions answered correctly.

(c) The topics and number of questions required in each question set are listed below for the appropriate examination element:

Topics	Element: 2	3(A)	3(B)	4(A)	4(B)
(1) FCC rules for the amateur radio services	10	5	4	6	8
(2) Amateur station operating procedures	2	3	3	1	4
(3) Radio wave propagation characteristics of amateur service frequency bands	1	3	3	2	2
(4) Amateur radio practices	4	4	5	4	4
(5) Electrical principles as applied to amateur station equipment	4		2	10	6
(6) Amateur station equipment circuit components	2		1	6	4
(7) Practical circuits employed in amateur station equipment	2		1	10	4
(8) Signals and emissions transmitted by amateur stations	2	2	2	6	4
(9) Amateur station antennas and feed lines	3	3	4	5	4

§ 97.505 Element credit.

(a) The administering VEs must give credit as specified below to an examinee holding any of the following documents:

(1) An unexpired (or within the grace period) FCC-issued amateur operator license: The least elements required for the license held. For a Technician Class operator license issued before March 21, 1987, credit must also be given for Element 3(B).

(2) A CSCE: Each element the CSCE indicates the examinee passed within the previous 365 days.

(3) A photocopy of a FCC Form 610 which was submitted to the FCC indicating the examinee qualified for a Novice Class operator license within the previous 365 days: Elements 1(A) and 2.

(4) An unexpired (or expired less than 5 years) FCC-issued commercial radiotelegraph operator license or permit: Element 1(C).

(b) No examination credit, except as herein provided, shall be allowed on the basis of holding or having held any other license.

§ 97.507 Preparing an examination.

(a) Each telegraphy message and each written question set administered to an examinee must be prepared by a VE holding an FCC-issued Amateur Extra Class operator license. A telegraphy message or written question set, however, may also be prepared for the following elements by a VE holding an FCC-issued operator license of the Class indicated:

(1) Element 3(B): Advanced Class operator.

(2) Elements 1(A) and 3(A): Advanced or General Class operator.

(3) Element 2: Advanced, General or Technician Class operator.

(b) Each question set administered to an examinee must utilize questions taken from the applicable question pool.

(c) Each telegraphy message and each written question set administered to an examinee for a Technician, General, Advanced, or Amateur Extra Class operator license must be prepared, or obtained from a supplier, by the administering VEs according to instructions from the coordinating VEC.

(d) The preparation of each telegraphy message and each written question set administered to an examinee for a Novice Class operator license is the responsibility of the administering VEs. The telegraphy message and written question set may be obtained by the administering VEs from a supplier.

(e) A telegraphy examination must consist of a message sent in the international Morse code at no less than the prescribed speed for a minimum of 5 minutes. The message must contain each required telegraphy character at least once. No message known to the examinee may be administered in a telegraphy examination. Each 5 letters of the alphabet must be counted as 1 word. Each numeral, punctuation mark and prosign must be counted as 2 letters of the alphabet.

§ 97.509 Administering an examination.

(a) Each examination for an amateur operator license must be administered at a location and a time specified by the administering VEs. Each administering VE must be present and observe the examinee throughout the entire examination. The administering VEs are responsible for the proper conduct and necessary supervision of each examination. The administering VEs must immediately terminate the examination upon failure of the examinee to comply with their instructions.

(b) Each examinee must comply with the instructions given by the administering VEs.

(c) No examination that has been compromised shall be administered to any examinee. Neither the same telegraphy message nor the same question set may be readministered to the same examinee.

(d) Passing a telegraphy receiving examination is adequate proof of an examinee's ability to both send and receive telegraphy. The administering VEs, however, may also include a sending segment in a telegraphy examination.

(e) Upon completion of each examination element, the administering VEs must immediately grade the examinee's answers. The administering VEs are responsible for determining the correctness of the examinee's answers.

(f) When the examinee is credited for all examination elements required for the operator license sought, the administering VEs must certify on the examinee's application form that the applicant is qualified for the license and report the basis for the qualification.

(g) When the examinee does not score a passing grade on an examination element, the administering VEs must return the application form to the examinee and inform the examinee of the grade.

(h) The administering VEs must accommodate an examinee whose physical disabilities require a special examination procedure. The administering VEs may require a physician's certification indicating the nature of the disability before determining which, if any, special procedures must be used.

(i) The FCC may:

(1) Administer any examination element itself;

(2) Readminister any examination element previously administered by VEs, either itself or under the supervision of VEs designated by the FCC; or

(3) Cancel the operator and station licenses of any licensee who fails to appear for readministration of an examination when directed by the FCC, or who does not successfully complete any required element which is readministered. In an instance of such cancellation, the person will be issued operator and station licenses consistent with completed examination elements that have not been invalidated by not appearing for, or by failing, the examination upon readministration.

97.511 Technician, General, Advanced and Amateur Extra Class operator license examination.

(a) Each session where an examina- on for a Technician, General, Ad- anced or Amateur Extra Class opera- r license is administered must be co- dinated by a VEC. Each administer- g VE must be accredited by the co- dinating VEC.

(b) Each examination for a Techni- an Class operator license must be ad- nistered by 3 administering VEs, ch of whom must hold an FCC- ued Amateur Extra or Advanced ass operator license.

c) Each examination for a General, vanced or Amateur Extra Class op- tor license must be administered by administering VEs, each of whom st hold an FCC-issued Amateur tra Class operator license.

) The administering VEs must ke a public announcement before inistering an examination for hnician, General, Advanced or ateur Extra Class operator license. number of candidates at any ex- nation may be limited.

(e) The administering VEs must issue a CSCE to an examinee who scores a passing grade on an examination element.

(f) Within 10 days of the administration of a successful examination for the Technician, General, Advanced or Amateur Extra Class operator license, the administering VEs must submit the application to the coordinating VEC.

§ 97.513 Novice Class operator license examination.

(a) Each examination for a Novice Class operator license must be administered by 2 VEs. The VEs do not have to be accredited by a VEC. Each administering VE must hold a current FCC-issued Amateur Extra, Advanced or General Class operator license.

(b) Within 10 days of the administration of a successful examination for a Novice Class operator license, the administering VEs must submit the application to: FCC, P.O. Box 1020, Gettysburg, PA 17326.

§ 97.515 Volunteer examiner requirements.

(a) Each administering VE must be at least 18 years of age.

(b) Any person who owns a significant interest in, or is an employee of, any company or other entity that is engaged in the manufacture or distribution of equipment used in connection with amateur station transmissions, or in the preparation or distribution of any publication used in preparation for obtaining amateur licenses, is ineligible to be an administering VE. An employee who does not normally communicate with that part of an entity engaged in the manufacture or distribution of such equipment, or in the preparation or distribution of any publication used in preparation for obtaining amateur operator licenses, is eligible to be an administering VE.

(c) No person may be a VE if that person's amateur station license or amateur operator license has ever been revoked or suspended.

(d) No VE may administer an examination to that VE's spouse, children, grandchildren, stepchildren, parents, grandparents, stepparents, brothers, sisters, stepbrothers, stepsisters, aunts uncles, nieces, nephews, and in-laws.

§ 97.517 Volunteer examiner conduct.

No VE may administer or certify any examination by fraudulent means or for monetary or other consideration including reimbursement in any amount in excess of that permitted. Violation of this provision may result in the revocation of the VE's amateur station license and the suspension of the VE's amateur operator license.

§ 97.519 Coordinating examination sessions.

(a) A VEC must coordinate the efforts of VEs in preparing and administering examinations.

(b) At the completion of each examination session coordinated, the coordinating VEC must collect the applications and test results from the administering VEs. The coordinating VEC must screen and forward all applications for qualified examinees within 10 days of their receipt from the administering VEs to: FCC P.O. Box 1020, Gettysburg, PA 17326.

(c) Each VEC must make any examination records available to the FCC, upon request

§ 97.521 VEC qualifications.

No organization may serve as a VEC unless it has entered into a written agreement with the FCC. The VEC must abide by the terms of the agreement. In order to be eligible to be a VEC, the entity must:

(a) Be an organization that exists for the purpose of furthering the amateur service;

(b) Be capable of serving as a VEC in at least the VEC region (see Appendix 2) proposed;

(c) Agree to coordinate examinations for Technician, General, Advanced, and Amateur Extra Class operator licenses;

(d) Agree to assure that, for any examination, every examinee qualified under these rules is registered without regard to race, sex, religion, national origin or membership (or lack thereof) in any amateur service organization;

(e) Not be engaged in the manufacture or distribution of equipment used in connection with amateur station transmissions, or in the preparation or distribution of any publication used in preparation for obtaining amateur licenses, unless a persuasive showing is made to the FCC that preventive measures have been taken to preclude any possible conflict of interest.

§ 97.523 Question pools.

All VECs must cooperate in maintaining one question pool for each written examination element. Each question pool must contain at least 10 times the number of questions required for a single examination. Each question pool must be published and made available to the public prior to its use for making a question set. Each question on each VEC question pool must be prepared by a VE holding the required FCC-issued operator license. See § 97.507(a) of this part.

§ 97.525 Accrediting VEs.

(a) No VEC may accredit a person as a VE if:

(1) The person does not meet minimum VE statutory qualifications or minimum qualifications as prescribed by this part;

(2) The FCC does not accept the voluntary and uncompensated services of the person;

(3) The VEC determines that the person is not competent to perform the VE functions; or

(4) The VEC determines that questions of the person's integrity or honesty could compromise the examinations.

(b) Each VEC must seek a broad representation of amateur operators to be VEs. No VEC may discriminate in accrediting VEs on the basis of race, sex, religion or national origin; nor on the basis of membership (or lack thereof) in an amateur service organization; nor on the basis of the person accepting or declining to accept reimbursement.

§ 97.527 Reimbursement for expenses.

(a) VEs and VECs may be reimbursed by examinees for out-of-pocket expenses incurred in preparing, processing, administering, or coodinating an examination for a Technician, General, Advanced, or Amateur Extra operator license.

(b) The maximum amount of reimbursement from any one examinee for any one examination at a particular session regardless of the number of examination elements taken must not exceed that announced by the FCC in a Public Notice. (The basis for the maximum fee is $4.00 for 1984, adjusted annually each January 1 thereafter for changes in the Department of Labor Consumer Price Index.)

(c) No reimbursement may be accepted by any VE for preparing, processing, or administering an examination for a Novice operator license.

(d) Each VE and each VEC accepting reimbursement must maintain records of out-of-pocket expenses and reimbursements for each examination session. Written certifications must be filed with the FCC each year that all expenses for the period from January 1 to December 31 of the preceding year for which reimbursement was obtained were necessarily and prudently incurred.

(e) The expense and reimbursement records must be retained by each VE and each VEC for 3 years and be made available to the FCC upon request.

(f) Each VE must forward the certification by January 15 of each year to the coordinating VEC for the examinations for which reimbursement was received. Each VEC must forward all such certifications and its own certification to the FCC on or before Janu- ry 31 of each year.

(g) Each VEC must disaccredit any E failing to provide the certification. he VEC must advise the FCC on Jan- ary 31 of each year of any VE that it as disaccredited for this reason.

PPENDIX 1 TO PART 97—PLACES WHERE THE AMATEUR SERVICE IS REGULATED BY THE FCC

n ITU Region 2, the amateur service is gulated by the FCC within the territorial nits of the 50 United States, District of lumbia, Caribbean Insular areas [Com- nwealth of Puerto Rico, United States gin Islands (50 islets and cays) and Na- sa Island], and Johnston Island (Islets st, Johnston, North and Sand) and dway Island (Islets Eastern and Sand) in Pacific Insular areas.

In ITU Region 3, the amateur service is regulated by the FCC within the Pacific Insular territorial limits of American Samoa (seven islands), Baker Island, Commonwealth of Northern Mariana Islands, Guam Island, Howland Island, Jarvis Island, Kingman Reef, Palmyra Island (more than 50 islets) and Wake Island (Islets Peale, Wake and Wilkes).

APPENDIX 2 TO PART 97—VEC REGIONS

1. Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont.
2. New Jersey and New York.
3. Delaware, District of Columbia, Maryland and Pennsylvania.
4. Alabama, Florida, Georgia, Kentucky, North Carolina, South Carolina, Tennessee and Virginia.
5. Arkansas, Louisiana, Mississippi, New Mexico, Oklahoma and Texas.
6. California.
7. Arizona, Idaho, Montana, Nevada, Oregon, Utah, Washington and Wyoming.
8. Michigan, Ohio and West Virginia.
9. Illinois, Indiana and Wisconsin.
10. Colorado, Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota and South Dakota.
11. Alaska.
12. Caribbean Insular areas.
13. Hawaii and Pacific Insular areas.

PART 100—DIRECT BROADCAST SATELLITE SERVICE

Subpart A—General Information

Sec.
100.1 Basis and purpose.
100.3 Definitions.

Subpart B—Administrative Procedures

100.11 Eligibility.
100.13 Application requirements.
100.15 Licensing procedures.
100.17 License term.
100.19 License conditions.

Subpart C—Technical Requirements

100.21 Technical requirements.

Subpart D—Operating Requirements

100.51 Equal employment opportunities.

AUTHORITY: Secs. 4, 303, 48 Stat. 1066, 1082, as amended; 47 U.S.C. 154, 303.

SOURCE: 47 FR 31574, July 21, 1982, unless otherwise noted.

best copy available

Subpart A—General Information

§ 100.1 Basis and purpose.

(a) The rules following in this part are promulgated pursuant to the provisions of Title III of the Communications Act of 1934, as amended, which vests authority in the Federal Communications Commission to regulate radio transmissions and to issue licenses for radio stations.

(b) The purpose of this part is to prescribe the manner in which parts of the radio frequency spectrum may be made available for the development of interim direct broadcast satellite service. Interim direct broadcast satellite systems shall be granted licenses pursuant to these interim rules during the period prior to the adoption of permanent rules. The Direct Broadcast Satellite Service shall operate in the frequency band 12.2-12.7 GHz.

§ 100.3 Definitions.

Direct Broadcast Satellite Service. A radiocommunication service in which signals transmitted or retransmitted by space stations are intended for direct reception by the general public. In the Direct Broadcast Satellite Service the term *direct reception* shall encompass both individual reception and community reception.

Subpart B—Administrative Procedures

§ 100.11 Eligibility.

An authorization for operation of a station in the Direct Broadcast Satellite Service shall not be granted to or held by:

(a) Any alien or the representative of any alien;

(b) Any foreign government or the representative thereof;

(c) Any corporation organized under the laws of any foreign government;

(d) Any corporation of which any officer or director is an alien;

(e) Any corporation of which more than one-fifth of the capital stock is owned of record or voted by aliens or their representatives or by a foreign government or representative thereof, or by any corporation organized under the laws of a foreign country;

(f) Any corporation directly or indirectly controlled by any other corporation of which any officer or more than one-fourth of the directors are aliens, if the Commission finds that the public interest will be served by the refusal or revocation of such license; or

(g) Any corporation directly or indirectly controlled by any other corporation of which more than one-fourth of the capital stock is owned of record or voted by aliens, their representatives, or by a foreign government or representatives thereof, or by any corporation organized under the laws of a foreign country, if the Commission finds that the public interest will be served by the refusal or revocation of such license.

§ 100.13 Application requirements.

(a) Each application for an interim direct broadcast satellite system shall include a showing describing the type of service that will be provided, the technology that will be employed, and all other pertinent information. The application may be presented in narrative format.

(b) Applicants may request specific frequencies and orbital positions. However, frequencies and orbital positions shall not be assigned until completion of the 1983 Region 2 Administrative Radio Conference for the Broadcasting-Satellite Service. The Commission shall generally consider all frequencies and orbital positions to be of equal value, and conflicting requests for frequencies and orbital positions will not necessarily give rise to comparative hearing rights as long as unassigned frequencies and orbital slots remain.

§ 100.15 Licensing procedures.

(a) Each application for an interim direct broadcast satellite system shall be placed on public notice for 45 days, during which time interested parties may file comments and petitions related to the application.

(b) A 45 day cut-off period shall also be established for the filing of applications to be considered in conjunction with the original application. Additional applications filed before the cut-off date shall be considered to have equal priority with the original application and shall be considered together in the assignment of frequencies and orbital positions. If applications have included requests for particular frequencies or orbital positions, the cut-off date shall be considered in establishing the priority of such requests.

(c) Each application for an interim direct broadcast satellite system, after the public comment period and staff review, shall be acted upon by the Commission to determine if authorization of the proposed system is in the ublic interest.

100.17 License term.

All authorizations for interim direct roadcast satellite systems shall be ranted for a period of five years.

100.19 License conditions.

(a) All authorizations for interim rect broadcast satellite systems shall subject to the policies set forth in e *Report and Order* in General ocket 80-603 and with any policies d rules the Commission may adopt a later date. It is the intention of e Commission, however, that in st circumstances the regulatory licies in force at the time of authoriion to construct a satellite shall nain in force for that satellite oughout its operating lifetime.

) Parties granted authorizations ll proceed with diligence in concting interim direct broadcast satte systems. Permittees of interim ect broadcast satellite systems shall required to begin construction or plete contracting for construction he satellite station within one year the grant of the construction nit. The satellite station shall also equired to be in operation within years of the construction permit t, unless otherwise determined by Commission upon proper showing y particular case. Transfer of conof the construction permit shall e considered to justify extension ese deadlines.

part C—Technical Requirements

21 Technical requirements.

or to the 1983 Regional Adminise Radio Conference for the Broadcasting-Satellite Service, interim direct broadcast satellite systems shall be operated in accordance with the sharing criteria and technical characteristics contained in Annexes 8 and 9 of the Final Acts of the World Administrative Radio Conference for the Planning of the Broadcasting-Satellite Service in Frequency Bands 11.7–12.2 GHz (in Regions 2 and 3) and 11.7–12.5 GHz (in Region 1), Geneva, 1977; *Provided, however,* That upon adequate showing systems may be implemented that use values for the technical characteristics different from those specified in the Final Acts if such action does not result in interference to other operational or planned systems in excess of that determined in accordance with Annex 9 of the Final Acts.

Subpart D—Operating Requirements

§ 100.51 Equal employment opportunities.

(a) *General policy.* Equal opportunity in employment shall be afforded all licensees [illegible] permittees of direct broadcast satellite stations licensed as broadcasters to all qualified persons, and no person shall be discriminated against in employment because of race, color, religion, national origin, or sex.

(b) *Equal employment opportunity program.* Each station shall establish, maintain, and carry out a positive continuing program of specific practices designed to assure equal opportunity in every aspect of station employment policy and practice. Under the terms of its program, a station shall:

(1) Define the responsibility of each level of management to ensure a positive application and vigorous enforcement of the policy of equal opportunity, and establish a procedure to review and control managerial and supervisory performance.

(2) Inform its employees and recognized employee organizations of the positive equal employment opportunity policy and program and enlist their cooperation.

(3) Communicate the station's equal employment opportunity policy and program and its employment needs to sources of qualified applicants without regard to race, color, religion, national

origin, or sex, and solicit their recruitment assistance on a continuing basis.

(4) Conduct a continuing campaign to exclude every form of prejudice or discrimination based upon race, color, religion, national origin, or sex from the station's personnel policies and practices and working conditions.

(5) Conduct continuing review of job structure and employment practices and adopt positive recruitment, training, job design and other measures needed in order to ensure genuine equality of opportunity to participate fully in all organizational units, occupations and levels of responsibility in the station.

(c) Applicants for a construction permit for a new facility, for authority to obtain assignment of the construction permit or license of such a station, for authority to acquire control of an entity holding such construction permit or license, (other than pro forma or involuntary assignments of transfers) and for renewal of license, shall file with the FCC programs designed to provide equal employment opportunities for American Indians and Alaskan Natives; Asians and Pacific Islanders; Blacks, not of Hispanic origin; Hispanics; and women, or amendments to such programs. Guidelines for the preparation of such programs are set forth in Forms 396 and 396A. A program need not be filed by an applicant who employs or proposes to employ less than five full-time employees. Additionally, a program for minority group members need not be filed if minorities constitute less than five percent, in the aggregate, of the labor force in the applicant's labor recruitment area. Applicants exempt from the filing requirement should submit a statement of explanation with their applications.

(d) Each licensee or permittee with five or more full-time employees shall file an annual employment report with the FCC on or before May 31 of each year on FCC Form 395.

CHAPTER II—OFFICE OF SCIENCE AND TECHNOLOGY POLICY AND NATIONAL SECURITY COUNCIL

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PART 201—EXECUTIVE POLICY AND RESPONSIBILITIES

Sec.
201.0 Background.
201.1 Authority.
201.2 Definitions.
201.3 Policy.
201.4 Responsibilities.

AUTHORITY: 61 Stat. 496 (50 U.S.C. 401); 64 Stat. 798 (50 U.S.C. app. 2061); 64 Stat. 1245 (50 U.S.C. app. 2251); 90 Stat. 463 (42 U.S.C. 6611); E.O. 12046, March 27, 1978 (43 FR 13349 *et seq.*).

SOURCE: 44 FR 33404, June 11, 1979, unless otherwise noted.

§ 201.0 Background.

(a) National policy with respect to the conservation, allocation, and use of the Nation's resources during a general war emergency, including nuclear attack upon the United States (hereinafter referred to as a national emergency), is set forth in the National Plan for Emergency Preparedness, developed within the Executive Office of the President in 1963 and revised in 1964. Successor Administrations have retained and endorsed the plan as the basic official national policy document.

(b) Chapter 7 of the plan (Telecommunications) sets forth substantive policy guidance for Federal, State, and local government emergency preparedness planning and establishes the interrelationship of levels of government with respect to development and execution of emergency preparedness plans.

(c) Following parts of this chapter will address specific responsibilities with respect to management of telecommunications resources and related procedures which bear upon provision, restoration, and continuity of communications services during a national emergency.

§ 201.1 Authority.

(a) Authorities and responsibilities related to and bearing upon national security and emergency preparedness telecommunications matters are set forth in:

(1) The Communications Act of 1934 (48 Stat. 1104, 47 U.S.C. 606), as amended.

(2) The National Security Act of 1947 (61 Stat. 496, 50 U.S.C. 402), as amended by the National Security Act Amendments of 1949 (63 Stat. 579, 50 U.S.C. 401 *et seq.*)

(3) The Presidential Memorandum of August 21, 1963, "Establishment of a National Communications System" (28 FR 9413, 3 CFR 1959-1963 comp., page 858).

(4) The Disaster Relief Act of 1974 (42 U.S.C. 5121 *et seq.*).

(5) The National Science and Technology Policy, Organization, and Priorities Act of 1976 (90 Stat. 463, 42 U.S.C. 6611).

(6) Executive Order 12046, "Relating to the Transfer of Telecommunications Functions," March 27, 1978, (43 FR 13349 *et seq.*)

(b) Authorities to be exercised in the execution and performance of emergency functions are subject to the provisions of the National Emergencies Act of 1976 (90 Stat. 1255, 50 U.S.C. 1601).

[44 FR 33404, June 11, 1979; 44 FR 47773, Aug. 15, 1979]

§ 201.2 Definitions.

The following definitions apply herein:

(a) *Telecommunications* means any transmission, emission, or reception of signs, signals, writing, images, graphics, and sounds or intelligence of any nature by wire, radio, optical, or other electromagnetic systems.

(b) *Telecommunications resources* include telecommunications personnel, equipment, material, facilities, systems, and services, public and private, wheresoever located within the jurisdiction of the United States.

(c) *Communications common carrier, specialized carrier,* or *carrier* means any individual, partnership, association, joint stock company, trust, or corporation subject to Federal or State regulation engaged in provided telecommunications facilities or services, for use by the public, for hire.

(d) *Government* means Federal, State, county, municipal, and other local government authority. Specific qualification will be provided whenever reference to a particular level of government is intended.

(e) *Private sector* means those sec-
ors of nongovernment entities en-
aged in private enterprise, public
ervices, and the general public, as
sers of telecommunications services.

(f) *National priorities* means those
ssential actions and activities in
hich the government and the private
ctor must become engaged in the in-
rests of national survival and recov-
y.

(g) *The National Communications
stem (NCS)* means that system
nich was established by Presidential
emorandum of August 21, 1963, 'Es-
blishment of a National Communica-
ns System." It is a confederative ar-
ngement in which certain Federal
encies participate with their owned
d leased telecommunications assets
provide necessary communications
vices for the Federal Government,
der all conditions, including nuclear
r.

1.3 Policy.

) The Federal Government is basi-
y responsible for resources mobili-
ion, including determination of the
d for and the extent of mobiliza-
necessary in all national emergen-
.

) In an immediate postattack
od all decisions regarding the use
esources will be directed to the ob-
ive of national survival and recov-
In order to achieve this objective,
attack resources will be assigned
ctivities concerned with the main-
nce and saving of lives, immediate
ary defense, and economic activi-
essential to continued economic
ival and recovery.

The President is authorized, if he
it necessary in the interest of na-
l defense and security, to direct
such telecommunications, as in
udgment may be essential, shall
precedence or priority with any
er subject to the Communications
of 1934, as amended. The Presi-
may give these directions at and
uch times as he may determine,
nay modify, change, suspend, or
them, and for any such purpose,
thorized to issue orders directly,
ough such person or persons des-
ed for the purpose, or through
the Federal Communications Commission.

(d) Federal, State, and local governments are to share the responsibility for conservation of the Nation's telecommunications resources. Although the President has responsibility for establishing national objectives, local conditions and relative urgency would determine the order and level of precedence within priorities.

(1) The achievement of survival and recovery would establish an unavoidable interdependence between and among Federal, State, and local authorities; therefore, there should be no barriers between these levels of authorities which would impede, obstruct, or otherwise hinder effective conservation and equitable allocation of resource and services to the needs of the Nation.

(2) The Federal Government will rely upon State governments and their telecommunications management organizations for management or control of intrastate carrier services and continuity of interconnectivity with interstate carriers to assure that national objectives and priorities are properly served.

(e) There will be a central authority within the Federal Government to control, coordinate, and direct the activities of the Nation's telecommunications facilities, systems, and services.

(f) Telecommunications resources of the Federal Government will be employed, as required, to best serve the continuity of government and national interests.

(g) A system of communications services priorities will be established which will facilitate early restoration of services considered vital to national interests.

(h) There will be a precedence system for the expeditious handling of telephone calls, messages, and data transmission via government and public correspondence facilites.

(i) Federal agencies will, in the development of emergency operational plans, minimize, to the extent feasible, dependence upon telecommunications services for continuity of essential operations.

§ 201.4 Responsibilities.

Executive responsibilities with respect to emergency preparedness and readiness in telecommunications matters are established and assigned as follows:

(a) The National Security Council (NSC).

(1) Coordinating the development of policy, plans, programs, and standards for the mobilization and use of the Nation's telecommunications resources in any emergency.

(2) Preparation of Presidential policy options concerning the development of the National Communications System (NCS).

(b) The Director, Office of Science and Technology Policy (OSTP).

(1) Preparation of Presidential policy options with respect to the evaluation of existing and planned communications systems to meet national security and emergency preparedness requirements in the provision of essential communications services.

PART 202—EMERGENCY PREPAREDNESS PLANNING AND EXECUTION

Sec.
202.0 Objectives.
202.1 Policies.
202.2 Criteria and guidance.
202.3 Plans preparation and execution.

AUTHORITY: 61 Stat. 496 (50 U.S.C. 401); 64 Stat. 798 (50 U.S.C. app. 2061); 64 Stat. 1245 (50 U.S.C. app. 2251); 90 Stat. 463 (42 U.S.C. 6611); E.O. 12046, March 27, 1978 (43 FR 13349 *et seq.*).

SOURCE: 44 FR 33405, June 11, 1979, unless otherwise noted.

§ 202.0 Objectives.

In the event of a general war and attack upon the Nation a national telecommunications services capability must exist to support critical needs and functions with respect to national security, survival, and recovery. Emergency preparedness must provide for, among other things:

(a) A radio and television broadcasting capability for the President to address the people of the Nation and for State and local authorities to inform, instruct, and direct jurisdictional populaces in civil defense matters.

(b) A central mechanism to contr coordinate, and direct the activities the various telecommunications faci ties, systems, and services.

(c) Emergency programs for th most efficient use of surviving tel communications resources and plar for establishing or activating vit emergency telecommunications facil ties, systems, and services with min mum delay.

(d) Procedures for management c telecommunications resources incluc ing controlled restoration of service to assure that most vital and critica services are afforded precedence.

(e) A central mechanism to guid and assist in long range planning fo reconstitution of the Nation's telecommunications systems in the postattack period.

(f) Survivability of essential telecommunications feasible within the constraints of justifiable costs.

(g) A capability to accomplish rapid damage assessement and decision making with respect to residual resources.

(h) Technical compatibility of signaling methods, transmission modes, switching facilities, and terminal devices to permit interexchange of communications over the surviving media of all systems, government or commercial.

(i) Plans for succession of positions of authority throughout government and industry.

§ 202.1 Policies.

(a) The telecommunications resources of the Nation will be available for use of government during a national emergency and to satisfy the needs of public welfare and safety. There will be a single point of authority within the Federal Government with respect to the allocation and use of surviving resources in support of national objectives enunciated by the President. Authority may be redelegated as necessary and when it can be exercised within boundaries established by Presidential authority.

(b) Facilities management will remain decentralized to the extent feasible to assure continued flexibility of operational response to critical needs, subject to the management direction and overriding authority of those officials delegated to act for and with the consent of the central point of authority within the Federal Government.

(1) Federally owned, leased, and/or operated telecommunications facilities, systems, and networks will be managed during an emergency by the agency normally controlling the facility, system, or network except that all operations will be subject to the management direction and authority of the officials delegated overall management responsibility for Federal Government systems.

(2) Facilities other than those of the Federal Government, with the exception of radio stations in the Aviation Services and certain classes of radio stations in the Martime Services, will be managed by the common carrier licensee or other person owning and operating such facilities, subject to Federal Communications Commission (FCC) guidance and direction or in accordance with State or local plans if an intrastate licensee.

(3) Radio stations in the Aviation Services and those aboard vessels in the Maritime Service will be subject to the control of the Secretary of Defense during a national emergency.

(c) Radio frequency utilization during a national emergency will be in accordance with authorizations, assignments, and mobilization plans in existence at the onset of the emergency subject to the overriding control of the central point of authority in the Federal Government for telecommunications matters.

(d) Radio stations are subject to closure if considered a threat to national security.

(e) Section 606 of the Communications Act of 1934, as amended, confers authority to the President in the matter of suspension of all rules and regulations pertaining to the use and operation of telecommunications facilities, public or private. That authority would be exercised only if such action were clearly required by national interest and after all reasonable alternatives had been examined and deemed inadequate.

[44 FR 33405, June 11, 1979; 44 FR 47773; Aug. 15, 1979]

§ 202.2 Criteria and guidance.

Emergency preparedness planning in government and industry with respect to effective conservation and use of surviving telecommunications resources in a postattack period must provide for orderly and uninhibited restoration of intercity services by the carriers and authoritative control of services allocation which will assure that precedence will be afforded the most critical needs of government and the private sector with respect to these objectives.

(a) The preservation of the integrity of characteristics and capabilities of the Nation's telecommunications systems and networks during a national emergency is of the utmost importance. This can best be accomplished by centralized policy development, planning, and broad direction. Detailed operations management will remain decentralized in order to retain flexibility in the use of individual systems in responding to the needs of national security, survival, and recovery. Each Federal agency responsible for telecommunications systems operations, and the carriers, are responsible for planning with respect to emergency operations. Guidance in this matter has been issued from a number of sources and contained in:

(1) Annex C-XI (Telecommunications), Federal Emergency Plan D (Classified).

(2) The Federal Communications Commission (FCC) Industrial Communications Emergency Plan (ICEP) Basic.

(3) The National Communications System Management Plan for Annex C-XI (Telecommunications) Federal Emergency Plan D (Classified).

(b) The continuity of essential communications services will be maintained through the use of controls and operational procedures to assure that precedence is given to vital services. Emergency preparedness with respect to telecommunications services will provide for, but is not limited to:

(1) A precedence system for public correspondence services.

(2) A circuit restoration priority system.

(3) Preemption authority.

(4) Control of access to common user networks, public and private.

(5) Allocation of private line services and channel time by competent authority.

(c) The Nation's telecommunications systems facilities are vulnerable to physical and radiological damage. Planning factors with respect to the resumption of intercity services in a postattack period must consider the probable loss of facilities which formerly provided direct and/or alternate intercity services between surviving population centers. Since surviving areas and population centers would serve as the sources of support to crippled areas of the Nation, the resumption of intercity services between and among surviving metropolitan areas will be of the highest priority with the carriers. The order of precedence of actions to effect intercity services restoration set forth in the following will not be modified except upon direction of the central point of authority in telecommunications matters.

(1) Establishment of coordination circuits between carrier offices.

(2) Restoration of multichannel intercity links.

(3) Restoration of vital private line services to government and the private sector.

(4) Reestablishment of public correspondence (toll) service to the extent that it will not interfere with essential private line services.

NOTE: Recognizing that intercity public correspondence circuits may be needed for the transmission of precedence type message and calls (see part 213 of this chapter) the communications carriers will provide for the restoration of a minimum number of such circuits when restoring multichannel intercity facilities. The carriers will notify the FCC and the Manager, NCS, in event that such restoration would interfere with the restoration of certified priority services (see part 211 of this chapter). Reestablishment of additional public correspondence (toll) service may proceed to the extent feasible within the restrictions set forth in paragraph (c)(4) of this section.

[44 FR 33405, June 11, 1979; 44 FR 47773, Aug. 15, 1979]

§ 202.3 Plans preparation and execution

National objectives and intere with respect to security, survival, a recovery during a national emergen may subjugate proprietary interests any telecommunications facili system, or network. Therefore, eme gency preparedness resources manag ment planning is oriented to a pe ceived need for purposeful and autho itative control of surviving resourc Federal authority, substantive pro sions, and functional responsibiliti set forth in the planning documen identified in § 202.2, preceding, a summarized in the following:

(a) Central Federal authority wi respect to telecommunications r source management has been deleg ed, by Executive Order, to the Dire tor, Office of Science and Technolo Policy (OSTP). In this functional rol the Director:

(1) Will prepare to exercise th emergency war powers of the Pre dent granted by section 606(a), (c), an (d) of the Communications Act 1934, as amended.

(2) Will prepare to execute, if nece sary, the emergency authorities whic may be delegated by the Directo Office of Defense Resources (ODR).

(3) Will report direct to the Pre dent, or his designated representativ on the status of telecommunicatio and provide recommendations with r spect to telecommunications and na tional priorities.

(4) Will provide general or specifi guidance to Federal agencies an State governments with respect to th use of telecommunications in civil de fense and for other purposes o common interest to Federal and Stat governments.

(b) Performance of essential govern ment and public services during a na tional emergency will require a mean for communications between govern ment and the people, communication essential to operations of elements o the national economy, and communi cations for national defense and civi defense purposes. The needs of the private sector and those of govern ment should be properly coordinated to ensure that responses to each of these communities of interest, government and private sector, are appropriately balanced. For this reason, the Director, Office of Science and Technology Policy (OSTP), has delegated the responsibility for the private sector to the Chairman, Federal Communications Commission (FCC), and responsibility for the needs of government to the Executive Agent, National Communications System (NCS). A parity of level of authority of these officials is established. They will coordinate and negotiate telecommunications conflicts with respect to the allocation and use of the Nation's telecommunications resources, reporting to the Director on unresolved issues which are within the domain of their respective responsibilities and authorities.

(1) The Chairman, Federal Communications Commission (FCC), functioning within his assigned responsibilities and authorities is responsible for:

(i) The provision of services by the common carriers, broadcast facilities, and safety and special radio services of the private sector.

(ii) Assignment and control of radio frequencies to Commission licensees.

(iii) Facilities protection and reduction of vulnerability.

(iv) Maintenance and restoration of facilities.

(v) Restoration of vital and essential intercity services.

(vi) Closure of radio stations as may be directed by the Director, Office of Science and Technology Policy (OSTP).

(vii) Enforcement of pertinent law and regulations as required in the interest of national security during a national emergency.

(2) The Executive Agent, National Communications System (NCS), or the Manager, NCS, as empowered and directed and functioning within delegated responsibilities and authority, will:

(i) Develop policy, plans, and procedures with respect to the use of telecommunications resources within and by the Federal Government.

(ii) Establish rules and procedures with respect to priorities and precedence in the provision of communications services to agencies of the Federal Government.

(iii) Establish rules and procedures with respect to the control of procurement of new or additional telecommunications services from the carriers during a national emergency.

(iv) Develop, with the assistance of appropriate Federal agencies, a decentralized, regionally oriented management organization structure capable of functioning independently in support of regional Directors of the Office of Defense Resources (ODR) within the terms and guidelines for emergency management established by the Manager, National Communications System (NCS).

(v) Coordinate Federal and State government emergency preparedness telecommunications planning to assure that planning of respective governments is mutually supportive and interrelationships and prerogatives are clearly defined.

(vi) Upon direction, implement without delay a structured system of emergency practices and procedures.

(vii) Establish and maintain control of the allocation of Federal telecommunications resources and services to the needs of the Federal Government to assure that most vital needs are afforded precedence.

(viii) In coordination with the Federal Communications Commission (FCC) assist and advise the Director, Office of Science and Technology Policy (OSTP), in the execution of emergency telecommunications management during a national emergency.

(c) Heads of other Federal agencies have related or collateral responsibilities in assisting the Director, Office of Science and Technology Policy (OSTP), in his role as the Nation's telecommunications resource manager during a national emergency.

(1) The Secretary of Commerce will assist the Director, Office of Science and Technology Policy (OSTP), in:

(i) Development of policy with respect to Federal and State government interrelationships and prerogatives regarding the continuity of interconnectivity of interstate and intrastate telecommunications systems and the control of facilities which are common to both classes of systems.

(ii) Development of policy, plans, and procedures for emergency acquisition or construction of and contracting for telecommunications facilities.

(iii) Development of emergency plans for control and allocation of frequency assignments in those parts of the electromagnetic spectrum assigned to the U.S. Government.

(2) The Secretary of Defense is responsible for development and execution of emergency plans with respect to:

(i) Control over radio facilities and stations aboard vessels in the Maritime Service and coordinating all necessary activities pertaining to other radio stations and facilities in the Maritime Service with the Chairman, Federal Communications Commission (FCC).

(ii) Control over radio facilities and stations aboard aircraft in the Aviation Services, and coordinating all necessary activities pertaining to other radio facilities and stations in the Aviation Services with the Chairman, Federal Communications Commission (FCC).

(3) The Secretary of the Interior is responsible for development and execution of emergency plans with respect to the administration of telecommunications activities in the territorial and trusteeship areas under the jurisdiction of the United States and within the responsibility previously assigned to him by appropriate laws and other authority.

(4) All Federal agencies with responsibility for management or operation of telecommunications facilities, systems, or networks are responsible for preparation and execution of emergency operational plans which will ensure that resources under their operational control will be capable of responding to the needs of the Government and the Nation in event of a national emergency.

PART 211—EMERGENCY RESTORATION PRIORITY PROCEDURES FOR TELECOMMUNICATIONS SERVICES

Sec.
211.0 Purpose.
211.1 Authority.
211.2 Definitions.
211.3 Scope and coverage.
211.4 Policy.
211.5 Priorities.
211.6 Submission and processing of re
tion priority requests.
211.7 Obligation of carriers.

AUTHORITY: 84 Stat. 2083 and Exe
Order 12046, 43 FR, 13349 et seq., Mar
1978.

SOURCE: 43 FR 50431, Oct. 30, 1978, u
otherwise noted.

§ 211.0 Purpose.

This part establishes policies
procedures under which governm
and private entities will be furni
restoration priorities to insure
leased intercity private line tele
munications services vital to the
tional interest will be mainta
during the continuance of a wa
which the United States engaged
supersedes the Director of Tele
munications Management Order
January 15, 1967 (32 FR 791, 47
201), which is hereby canceled.
assure the effective ability to im
ment its provisions, and also in o
that government and industry
sources may be used effectively u
all conditions ranging from natio
emergencies to international crises,
cluding nuclear attack, a single se
rules and procedures is essential,
they must be applied on a day-to-
basis so that the priorities they es
lish can be implemented at once w
the occasion arises. As provided for
Part 18 of Executive Order 11490,
amended (3 CFR, 1966-1970 Comp.,
820), policies, plans, and procedu
developed pursuant to the Execut
order shall be in consonance with t
plans and policies contained in t
part.

§ 211.1 Authority.

(a) Authority to direct priorities f
the restoration of communicatio
services in national emergencies
vested in the President, including a
thority conferred by section 103 of t
National Security Act of 1947,
amended (50 U.S.C. 404), section 10
of the Defense Production Act of 195
as amended (50 U.S.C. App. 2070), se
tion 201 of the Federal Civil Defens
Act of 1950, as amended (50 U.S.C
App. 2281), section 1 of Reorganiz
tion Plan No. 1 of 1958, as amended (

CFR, 1954-1958 Comp., p. 447), and section 606 of the Federal Communications Act of 1934, as amended. (47 U.S.C. 606).

(b) Authority to develop plans policies, and procedures for the establishment of such restoration priorities has been delegated to the National Security Council, by Executive Orders 11051, 11490, and by the President's Memorandum of August 21, 1963 (28 FR 9413, 3 CFR Part 858 (1959-63 comp.)), all as amended by Executive Order 12046, (FR 43, 13349 *et seq.*).

§ 211.2 Definitions.

The following definitions apply herein—

(a) *Communications common carrier* or *carrier* means any person gaged in communications common carriage for hire, in intrastate, interstate, or international telecommunications.

(b) *Circuit* means a carrier's specific designation of the overall facilities provided between, and including, terminals for furnishing service. When service involves network switching, *circuit* includes those circuits between subscriber premises and switching centers (access lines) and those between switching centers (trunks).

(c) *Station* means transmitting or receiving equipment or combination transmitting and receiving equipment, at any location, or any premise, connected for private line service.

(d) *Private line service* means leased intercity private line service provided by carriers for intercity domestic and international communications over integrated communications pathways, and includes interchange facilities, local channels, and station equipment which may be integral components of such communications service.

(e) *Restoration* means the recommencement of service by patching, rerouting, substitution of component parts, and other means, as determined necessary by a carrier.

(f) *Government* means Federal, foreign, State, county, municipal, and other local government agencies. Specific qualifications will be supplied whenever reference to a particular level of government is intended, e.g., *Federal Government, State government. Foreign Government* includes coalitions of governments secured by treaty, including NATO, SEATO, OAS, UN, and associations of governments or government agencies, including the Pan American Union, International Postal Union, and International Monetary Fund. *Quasi-government* includes eleemosynary relief organizations, such as the Red Cross organizations.

(g) *National Communications System (NCS)* means that system established by the President's Memorandum of August 21, 1963, "Establishment of a National Communications System" (28 FR 9413, 3 CFR, 1959-1963 Comp., p. 858).

(h) *Executive Agent* means the Executive Agent of the National Communications System.

(i) *Commission* means the Federal Communications Commission.

§ 211.3 Scope and coverage.

(a) The priority system and procedures established by this part are applicable to:

(1) U.S. domestic leased intercity private line services, including private line switched network services;

(2) U.S. international leased private line services to the point of foreign entry;

(3) Foreign extensions of U.S. international leased private line services to the extent possible through agreement between U.S. carriers and foreign correspondents;

(4) International leased private line services terminating in or transiting the United States;

(5) Federal Government-owned and leased circuits.

(b) The priority system and procedures established by this part are not applicable to operational circuits or order wires of the carriers needed for circuit reactivation and maintenance purposes, which shall have priority of restoration over all other circuits and shall be exempt from interruption for the purpose of restoring priority services.

§ 211.4 Policy.

During the continuance of a war in which the United States is engaged and when the provisions of this part are invoked, all communications common carriers shall comply with the following principles insofar as possible:

(a) Whenever necessary to maintain or restore a service having a designated priority, services having lower priority, lower subpriority, or no priority, will be interrupted in the reverse order of priority starting with nonpriority services.

(b) When services are interrupted to restore priority services, carriers will endeavor if feasible to notify users of the reason for the preemption.

(c) When public correspondence circuits are needed to satisfy requirements for priority services, idle circuits will be selected first. A minimum number of public correspondence circuits shall at all times be kept available so as to provide for the transmission of precedence-type messages and calls.

(d) Communications common carriers will not interrupt conversations having priority classification except insofar as necessary to restore services of higher priority.

(e) It is recognized that as a practical matter in providing for the maintenance or restoration of a priority service or services operating within a multiple circuit-type facility (such as a carrier band, cable, or multiplex system), lower priority, lower subpriority, or nonpriority services on paralleled channels within a band or system may be restored concurrently with higher priority services. Such reactivation shall not, however, interfere with the expedited restoration of other priority services.

(f) The Executive Agent is authorized to instruct the carriers on the percentage of government-switched network intermachine trunks to be restored to provide capacity for priority access line traffic.

(g) The carriers are authorized to honor NCS-certified priorities from other authorized carriers for leased facilities.

(h) The carriers are authorized to honor restoration priorities certified by the Executive Agent.

(i) To ensure the effectiveness of the system of restoration priorities established by this part it is essential that rigorous standards be applied. Users are requested and directed to examine their private line service requirements in light of the criteria specified in this part and with regard to the availability of alternate communications facilities such as public correspondence message services, and Government-owned emergency communications systems.

§ 211.5 Priorities.

There are hereby established four levels of restoration priority. Within each level, subpriorities may be established by the Executive Agent, with the concurrence of the National Security Council, for both government and nongovernment services. The subpriorities categories currently in use, which have been established by the Executive Agent will remain in effect until modified. Compatibility of subcategories applicable to government and nongovernment users is essential to achieve the objective of a single restoration priority system.

(a) *Priority 1.* Priority 1 shall be the highest level of restoration priority, and shall be afforded only to Federal and Foreign Government private line services, and to Industrial/Commercial services which are designated for prearranged voluntary participation with the Federal Government in a national emergency. Circuit requirements in this level of priority shall be limited to those esential to national survival if nuclear attack occurs for:

(1) Obtaining or disseminating critical intelligence concerning the attack, or immediately necessary to maintain the internal security of the United States;

(2) Conducting diplomatic negotiations critical to the arresting or limiting of hostilities;

(3) Executing military command and control functions essential to defense and retaliation;

(4) Giving warning to the U.S. population;

(5) Maintaining federal Government functions essential to national survival under nuclear attack conditions.

(b) *Priority 2.* Priority 2 shall be the second highest level of restoration priority, and shall be afforded only to

Federal and Foreign Government private line services, and to Industrial/ Commercial services which are designated for prearranged voluntary participation with the Federal Government in a national emergency. Circuit requirements in this level shall be limited to those essential, at a time when nuclear attack threatens, to maintain an optimum defense posture and to give civil alert to the U.S. population. These are circuit requirements whose unavailability would present serious dangers:

(1) Reducing significantly the preparedness of U.S. defense and retaliory forces;

(2) Affecting adversely the ability of he United States to conduct critical reattack diplomatic negotiations to educe or limit the threat of war;

(3) Interfering with the effectual diection of the U.S. population in the interest of civil defense and survival;

(4) Weakening U.S. capability to accomplish critical national internal seurity functions:

(5) Inhibiting the provision of essenal Federal Government functions ecessary to meet a preattack situaon.

(c) *Priority 3.* Priority 3 shall be the ird highest level of restoration priity and shall be afforded to governent, quais-government, and Industri/Commercial private line services: *ovided, however,* That Priority 3 will afforded circuits serving Industrial/ mmercial, State, county, municipal, d quasi-state and local government encies only where, during an emerncy, at least one station in the cirt (or in connected circuits if itched service is involved) will be nned continually, or where such cuits are automated and will be der constant surveillance from a note location. Circuit requirements this level shall be limited to those essary for U.S. military defense diplomacy, for law and order, and national health and safety in a naial emergency involving heightened sibility of hostilities. These are cur requirements needed to:

) Insure performance of critical loic functions, public utility services, administrative-military support ctions;

(2) Inform key diplomatic posts of the situation and of U.S. intentions;

(3) Secure and disseminate urgent intelligence;

(4) Distribute essential food and other supplies critical to health;

(5) Provide for critical damage control functions;

(6) Provide for hospitalization;

(7) Continue critical Government functions;

(8) Provide transportation for the foregoing activities.

(d) *Priority 4.* Priority shall be the fourth highest restoration priority and shall be afforded to government, quasi-government, and Industrial/ Commercial private line services: *Provided, however,* That Priority 4 will be afforded circuits serving Industrial/ Commercial, State, county, municipal, and quasi-state and local government agencies only where, during an emergency, at least one station in the circuit (or in connected circuits if switched service is involved) will be manned continually, or where such circuits are automated and will be under constant surveillance from a remote location. Circuit requirements in this level shall be limited to those necessary for the maintenance of the public welfare and the national economy in a situation short of nuclear attack, or during reconstitution after attack. These include circuit requirements needed to continue the more important financial, economic, health, and safety activities of the Nation.

§ 211.6 Submission and processing of restoration priority requests.

(a) Except as otherwise provided below, all requests for restoration priority assignments will be submitted to the Executive Agent in the format prescribed by him for processing and certification.

(b) Priority 3 and 4 applications from county and municipal governments, quasi-state and local government agencies and private entites shall be forwarded to the Federal Communications Commission for its approval and for certification to the carriers. These submissions will be in the form prescribed by the Commission.

(c) Industrial/Commercial entities designated for prearranged voluntary participation with the Federal Government in a national emergency should submit separate applications to the Commission when requesting the assignment of priorities in category 1 or 2. Such assignments will require the approval of the National Security Council in order to continue to be effective during a war emergency. In all cases the justification for restoration priorities will contain a validation statement from the Government agency with whom participation is prearranged.

(d) Requests for restoration priority assignments made by Foreign Government agencies, except for NATO, NATO national military authority, and such other requests as the Executive Agent may be designated, will be submitted to the Department of State for initial evaluation and review. The Department will forward to the Executive Agent for processing and approval such of these requests as it finds acceptable.

(e) Requests for restoration priority assignments made by NATO, NATO national military authority, and such other requests as the Executive Agent may designate, will be forwarded through established Allied Long Lines Agency (ALLA) channels to the Secretary of Defense. The Secretary will forward to the Executive Agent for processing and approval such of these requests as he finds acceptable pursuant to approved NATO/U.S. procedures.

(f) Requests for temporary upgrading of restoration priority assignments occasioned by special critical conditions, including natural disasters, heightened diplomatic and political tenseness, and tracking and control of manned space operations, may be submitted to the Executive Agent together with such information as he may require for expedited processing decision.

(g) All assignments, denials and changes of restoration priorities and subpriorities are subject to review and modification by the National Security Council.

(h) When requesting service from the carriers the user must include the certified restoration priority on the service authorization.

§ 211.7 Obligation of carriers.

(a) During the continuance of a war in which the United States is engaged, and when the provisions of this part are invoked, all carriers shall accord restoration priority assignments certified pursuant to this part priority over all other circuits.

(b) To promote the national interest and defense preparedness, carriers shall:

(1) Maintain such records of restoration priority assignments certified pursuant to this part as may be necessary to enable prompt implementation;

(2) Enter into agreements, to the extent possible, with their foreign correspondents to effect restoration of the foreign portion of leased international services in accordance with this part;

(3) Notify the Executive Agent of foreign correspondent procedures affecting Federal Government services that are not reasonably consistent with the priority requirements of this part.

PART 212—PROCEDURES FOR OBTAINING INTERNATIONAL TELECOMMUNICATION SERVICE FOR USE DURING A NATIONAL EMERGENCY

Sec.
212.0 Authority.
212.1 Purpose.
212.2 Scope.
212.3 Circuit restoration procedures.
212.4 Responsibilities.
212.5 Other requirements.
212.6 Coordination of requirements.
212.7 Implementation.

AUTHORITY: E.O. 10995, E.O. 11084, 3 CFR 1959–1963 Comp., pp. 535 and 719; Memorandum of Aug. 21, 1963, 3 CFR 1959-1963 Comp., p. 858, E.O. 12046, 43 FR 13349, Mar. 29, 1978.

SOURCE: 43 FR 50434, Oct. 30, 1978, unless otherwise noted.

§ 212.0 Authority.

(a) Authority to prescribe procedures for obtaining telecommunication resources during an emergency is contained in Executive Order 12046 (FR

43, 13349 *et seq.*), and the President's National Communications Memorandum of Aug. 21, 1963 (28 FR 9413, 3 CFR, 1959-1963 Comp., p. 858).

(b) These procedures are applicable to the communications common carriers and non-Federal Government users under the President's authority contained in subsection 606(a) of the Communications Act of 1934, as amended. The authority under subsection 606(a) has been delegated by Executive Order 12046 to the Director of the Office of Science and Technology Policy. This authority may be exercised only during the continuance of a war in which the United States is engaged.

§ 212.1 Purpose.

The purpose of this part is to replace Annex 2 of EMO 3000.1, 32A CFR, Chap. I, and to provide specific guidance to Government and private entities who may have new requirements for international telecommunication service during national emergencies.

§ 212.2 Scope.

The procedures in this part provide guidance for the submission of emergency requirements for telecommunication channels between the United States and overseas or foreign points. Guidance on this subject was previously contained in Annex 2 of DMO 3000.1 and Mobilization Plan IX-3. Mobilization Plan IX-3 has been canceled.

212.3 Circuit restoration procedures.

The restoration priority procedures or these emergency requirements hall be in accordance with the order ntitled "Priority System for the Use nd Restoration of Leased Intercity rivate Line Services During Emergeny Conditions," FCC Order 67-51.

212.4 Responsibilities.

(a) Executive departments and agenies of the United States, whether or ot components of the National Comunications System, (NCS), shall ubmit their international emergency elecommunications requirements to he Executive Agent, National Comunications System, for coordination and consolidation of mobilization requirements.

(b) The Department of Defense shall coordinate NATO requirements in consonance with approved NATO/U.S. procedures for subsequent processing by the Executive Agent, National Communications System.

(c) The Department of State shall coordinate and approve foreign government circuit requirements and then forward them to the Executive Agent, NCS, for further processing.

§ 212.5 Other requirements.

Those entities, other than Executive department and agencies of the United States, having need for emergency international telecommunication service shall present their requirements to the Federal Communications Commission (FCC).

§ 212.6 Coordination of requirements.

(a) The NCS and FCC shall meet periodically to review the total mobilization requirements and to evaluate the impact of these requirements upon the common carriers' capability. If the situation develops in which emergency requirements cannot be provided by the communications common carriers, the Executive Agent, NCS, or the FCC, as appropriate, shall immediately notify the Director of the Office of Telecommunications Policy of that situation.

(b) The Director of the Office of Science and Technology Policy will assume the responsibility for coordinating and integrating mobilization requirements which are presented to him, making use of the knowledge, information, and advice of the FCC. These requirements shall be evaluated with due regard to facilities which must remain under the control of the commercial companies and those which must be generally available to the public and the Government.

§ 212.7 Implementation.

Executive departments and agencies of the United States are authorized to issue such additional orders as are necessary to effect implementation of this part.

PART 213—GOVERNMENT AND PUBLIC CORRESPONDENCE TELECOMMUNICATIONS PRECEDENCE SYSTEM

Sec.

213.0 Authority.
213.1 Background and purpose.
213.2 Scope.
213.3 Cancellation.
213.4 Definitions.
213.5 Precedence designators.
213.6 Criteria.
213.7 Policies.
213.8 Implementation.

AUTHORITY: Sec. 606, 48 Stat. 1104; 47 U.S.C. 606, E.O. 10705, 3 CFR, 1954-1958 Comp. E.O. 10995, 3 CFR, 1959-1963 Comp., President's Memorandum of August 21, 1963; 3 CFR, 1959-1963 Comp., p. 858; E.O. 12046, 43 FR 13349, Mar. 29, 1978.

SOURCE: 43 FR 50434, Oct. 30, 1978, unless otherwise noted.

§ 213.0 Authority.

(a) The voice and message precedence procedures for departments and agencies of the Federal Government prescribed by this part are prescribed pursuant to Executive Order No. 12046 (43 FR 13349 *et seq.*) and the President's memorandum of August 21, 1963, which established the National Communications System (28 FR 9413; 3 CFR, 1959-1963 Comp., p. 858).

(b) The procedures applicable to communications common carriers and non-Federal Government users prescribed by this part are prescribed by authority conferred upon the President by subsection 606(a) of the Communications Act of 1934, as amended, and delegated to the National Security Council by Executive Order 12046. That authority under section 606(a) may be exercised only during the continuance of a war in which the United States is engaged.

§ 213.1 Background and purpose.

(a) The National Security Council and the Federal Communications Commission have agreed upon a precedence system for the expeditious handling of messages and calls transmitted over Government and public correspondence facilities in all types of situations from peacetime to massive nuclear attack. Effectuation of that system requires that the Director issue a circular and that the Commission concurrently issue an order prescribing the standards, procedures, policies, and regulations that together, constitute this single integrated precedence system.

(b) In conformity with that agreement the National Security Council is issuing this circular the purpose of which is to prescribe, on behalf of the President, that part of those standards, procedures, policies, and regulations which are within the cognizance of the NSC.

No significance should be attached to the fact that slightly different terms are used in their circular from those used in the companion order of the FCC. Those differences result from differences in terms in the basic legal authorities of the director and the Commission rather than from an intent to denote a distinction in purpose or effect.

§ 213.2 Scope.

The precedence system contained herein is applicable to:

(a) Users of Government service facilities, whether owned or leased.

(b) Users of public correspondence service facilities of the communication common carriers, to U.S. domestic and international communication common carriers, and to the extent possible by agreement between the latter and their foreign correspondents.

§ 213.3 Cancellation.

This circular cancels:

(a) Attachments A and B to Annex 3 of DMO 3000.1, dated November 8, 1963 (28 FR 12273).

(b) That portion of the memorandum of the Special Assistant to the President for Telecommunications, dated August 27, 1964, pertaining to message precedences.

§ 213.4 Definitions.

As used herein:

(a) Public correspondence services means those services offered to the general public for communications between all points served by a carrier or by interconnected carriers on a nonexclusive message by message or call by

pasis, as differentiated from leased
ate line services.

The term *precedence* means the
· in which messages and calls are
essed. Transmission of informa-
and call completion is therefore
accomplished in the order re-
d by the precedence designator.
uch properly categorized commu-
ons precede noncategorized com-
cations.

The term *Government* where
alone means Federal, foreign,
county, or municipal govern-
agencies. Specific reference will
ade whenever it is intended to
to less than the whole, e.g.,
Government, Federal Govern-
etc.

The term *Foreign Government*
es those foreign diplomatic and
ar establishments and those
ons or associations of govern-
such as NATO, SEATO, OAS,
nd associations of governments
ernmental agencies such as Pan
an Union, International Postal
International Monetary Fund,
nilar organizations.

he term *message* means a writ-
other form of record communi-
prepared for transmission and
at the destination.

he term *call* means a request
user for a connection to an-
ation whether for telephone or
communication.

Precedence designators.

ne following precedence desig-
are available for Government
lic correspondence users:

ernment	Domestic public correspondence and international telephone calls
	Flash emergency.
	Immediate emergency.
	Priority emergency.
	(No domestic equivalent.)

overnment and non-Govern-
ers of public correspondence
will handle their international
in accordance with current
egraph Regulations. Govern-
rs should note that, general-
only precedence designator
for their use for internation-
ges sent over public corre-

spondence circuits if Etat Priorite. The ITU Regulations do not contain precedence designators which equate to Flash, Immediate, or Priority. Accordingly, Government messages whether Flash, Immediate, or Priority precedence when sent over international public correspondence circuits will be handled as Etat Priorite messages. Thus, Priority messages will receive the same treatment in transmission and processing as Immediate or Flash messages. Conversely, Etat Priorite messages received in the United States shall be transmitted and processed in the order of receipt, to the extent possible. The precedence designator available for non-Government users of public correspondence services is Urgent. The Urgent designator is limited for use only during wartime conditions, as declared pursuant to section 606 of the Communications Act of 1934.

(c) Domestic and International U.S. common carriers, insofar as practicable by agreement with their foreign correspondents, shall endeavor to arrange the proper level of precedence handling of international messages and calls originating, terminating in, or transiting the United States: *Provided, however,* That insofar as international messages are concerned the level of precedence shall be consistent with the International Telecommunication Conventions and regulations thereunder.

(d) The Government designators shall be used throughout the Federal Government. All messages and telephone calls sent via public correspondence services shall use domestic or international public correspondence designators as appropriate. Thus, the responsibility is on Government and public correspondence users to recognize and use the appropriate designators when using public correspondence services.

(e) On international telephone calls the carrier's operator will convert to the appropriate international designator.

§ 213.6 Criteria.

(a) *Flash, Flash Emergency.* (1) This is the highest order of precedence and shall be strictly limited to Federal and Foreign Government agencies.

(2) Flash, or Flash Emergency telephone calls or messages shall be handled in the order received and ahead of all calls or messages except as indicated for international messages in ITU Regulations. When necessary to obtain a circuit for a Flash, or Flash Emergency call any call in progress of a lesser precedence will be interrupted, if feasible. Any message of a lesser precedence in the process of transmission will be halted, if feasible, to clear the channel for the Flash or Flash Emergency transmission. Flash or Flash Emergency precedence shall be reserved for calls and messages having an immediate bearing on:

(i) Command and control of military forces essential to defense and retaliation.

(ii) Critical intelligence essential to national survival.

(iii) Conduct of diplomatic negotiations critical to the arresting or limiting of hostilities.

(iv) Dissemination of critical civil alert information essential to national survival.

(v) Continuity of Federal governmental functions essential to national survival.

(vi) Fulfillment of critical U.S. internal security functions essential to national survival.

(vii) Catastrophic events of national or international significance, such as Presidential Action Notices essential to national survival during attack or preattack conditions.

(b) *Immediate, Immediate Emergency, Urgent.* Immediate, Immediate Emergency, or Urgent telephone calls or messages shall be handled as fast as possible and ahead of all other calls or messages except those having a higher precedence. Any message or call of a lower precedence in the process of transmission will be halted, if feasible, to clear the channel for this transmission. It will be reserved generally for calls or messages pertaining to:

(1) Situations which gravely affect the security of national and allied forces.

(2) Reconstitution of forces in a postattack period.

(3) Intelligence essential to national security.

(4) Conduct of diplomatic negotiations to reduce or limit the threat of war.

(5) Implementation of Federal Government actions essential to national survival.

(6) Situations which gravely affect the internal security of the United States.

(7) Civil defense actions concerning direction of our population and its survival.

(8) Disasters or events of extensive seriousness having an immediate and detrimental effect on the welfare of the population.

(9) Vital information having an immediate effect on aircraft, spacecraft, or missile operations.

(c) *Priority, Priority Emergency, Urgent.* Priority, Priority Emergency, or Urgent messages and calls shall take precedence over messages or calls designated *Routine*, or in the case of common carriers, over all nonprecedence traffic. Priority, Priority Emergency, or Urgent precedence is generally reserved for calls or messages which require expeditious action. Examples are calls or messages pertaining to:

(1) Information on locations where attack is impending or where fire or air support will soon be placed.

(2) Air-ground integrated operations.

(3) Important intelligence.

(4) Important diplomatic information.

(5) Important information concerning the launch, operation, or recovery of spacecraft or missiles.

(6) Movement of naval, air, and ground forces.

(7) Coordination between governmental agencies concerning the performance of emergency preparedness functions.

(8) Major civil aircraft accidents.

(9) Maintaining the public health, safety, and the welfare of our population.

(10) Critical logistic functions, provisions of critical public utility services, and administrative military support functions.

(11) Distributing essential food and supplies critical to health.

2) Accomplishing tasks necessary
sure critical damage control func-
s.

) Preparations for adequate hos-
ization.

) Continuity of critical Govern-
functions.

) Arranging minimum transporta-
for accomplishing the aforesaid
ions.

) Continuing or reestablishing
ore important financial, econom-
ealth, and safety activities. Pro-
g, procuring, and distributing
materials and supplies which are
ered necessary to the immediate
rt of a war effort, the national
se, or for expediting the means
eting the effects of natural disas-

Prompt delivery of information
ss representatives to news media
zations and newspapers covering
of national or widespread disas-

Routine; no domestic equivalent.
e precedence designation ap-
o those normal day-to-day com-
tions which require rapid
ission by telephone or message,
not require urgent or preferen-
ndling.

Policies.

lls and messages in each prece-
classification above shall have
edence over others within the
classification, except where,
the same classification, they
be handled simultaneously.
hey shall be handled in the
their receipt.

dividuals whose requirements
them to use the precedence
share the responsibility for in-
s effectiveness. Users must fa-
themselves with the purposes
rved by the use of each prece-
esignator. It must be remem-
at the entire system will oper-
essfully only if the use of the
ce designator is limited strict-
intended purposes. Each user
nsider whether each message
equires any special precedence
rcise care not to specify a
recedence than circumstances

(c) For public correspondence message services, the domestic or international precedence designators shall be shown in full by the sender as the first word preceding the name of the addressee.

(d) For public correspondence call services, the user should first attempt to complete the call in the normal manner. In the event the user is unable to complete the call and the type of communication falls within one of the precedence categories listed herein the call should be filed with an operator for completion and the user must specify the required precedence handling by stating that this is a Flash Emergency, Immediate Emergency, or Priority Emergency call, whichever the case may be.

(e) Any apparent misuse of precedence indicators by non-Federal Government activities brought to the attention of the communication common carriers shall be referred to the FCC on and after-the-fact basis.

(f) Any apparent misuse by Federal Government activities brought to the attention of the communication common carriers shall be referred to the Executive Agent, National Communications System. The Executive Agent will refer any matter which cannot be resolved with the cognizant Government activity to the National Security Council, for decision.

(g) It is essential to provide public message and call capability for the transmission of military, governmental, and essential non-Government precedence messages and calls. Private line services for military, governmental, and other essential users are protected under a Priority System for Intercity Private Line Services promulgated by the FCC (FCC Order 67-51) and the National Security Council. However, during national emergencies, military, governmental, and other essential users will have additional requirements for prompt completion of precedence traffic over public correspondence communication common carrier facilities. Therefore, notwithstanding the provisions of the above-described Priority System for Intercity Private Line Services, communication common carriers shall have available a minimum number of public correspondence circuits at all times so as to provide for the transmission of precedence type messages and calls. Normally, the communication common carriers shall use their judgment in determining this number of circuits required for public correspondence precedence traffic. However, the authority is reserved to the National Security Council or the Federal Communications Commission, as appropriate to the time and situation, to revise the decisions of the carriers respecting the allocation of circuits, and to resolve any questions which are referred to them by the carriers or the users.

§ 213.8 Implementation.

Federal departments and agencies are authorized to issue such additional orders as are necessary to effect implementation of this circular.

PART 214—PROCEDURES FOR THE USE AND COORDINATION OF THE RADIO SPECTRUM DURING A NATIONAL EMERGENCY

Sec.
214.0 Authority.
214.1 Purpose.
214.1 Scope.
214.3 Assumptions.
214.4 Planned actions.
214.5 Responsibilities.
214.6 Postattack procedures and actions.

AUTHORITY: 84 Stat. 2083 and E.O. 12046 (43 FR 13349 et seq., Mar. 29, 1978).

SOURCE: 43 FR 50436, Oct. 30, 1978, unless otherwise noted.

§ 214.0 Authority.

The provisions of this Part 214 are issued pursuant to Reorganization Plan No. 1 of 1970, 84 Stat. 2083, and Executive Order 12046 (43 FR 13349 et seq.). This Part 214 replaces Annex 1 of DMO 3000.1, dated November 8, 1963. (28 FR 12273).

§ 214.1 Purpose.

The purpose of this part is to provide guidance for the use of the radio spectrum in a period of war, or a threat of war, or a state of public peril or disaster or other national emergency.

§ 214.2 Scope.

This part covers procedures for the use of radio frequencies upon proclamation by the President that there exists war, or a threat of war or a state of public peril or disaster or other national emergency or in order to preserve the neutrality of the United States. These procedures will be applied in the coordination, application for, and assignment of radio frequencies upon order of the Director, OSTP. These procedures are intended to be consistent with the provisions and procedures contained in emergency plans for use of the radio spectrum.

§ 214.3 Assumptions.

When the provisions of this part become operative, Presidential emergency authority, including Executive Order 11490, 12046 (3 CFR, 1966-1970 Comp., p. 820), and other emergency plans regarding the allocation and use of national resources will be in effect. In a postattack period, the Director, OSTP, will have authority to make new or revised assignments of radio frequencies in accordance with authority delegated by the President.

§ 214.4 Planned actions.

(a) Whenever it is determined necessary to exercise, in whole or in part, the President's emergency authority over telecommunications, the Director, OSTP, will exercise that authority as specified in Executive Order 12046, FR 43, 13349 et seq.

(b) In this connection, and concurrently with the war or national emergency proclamation by the President, the Director will:

(1) Authorize the continuance in force of all outstanding frequency authorizations issued by the Director, OSTP, and the Federal Communications Commission (FCC), except as those authorizations may be modified by emergency plans for use of the radio spectrum and except as they may otherwise be modified or revoked by the Director in the national interest;

(2) Redelegate to the Secretary of Defense authority necessary to control the use of the radio spectrum in areas of active combat, where such control is

necessary to the support of U.S. military operations;

(3) Close all non-Government radio stations in the international broadcasting service as defined in the FCC rules and regulations, except those carrying or scheduled to carry U.S. Government-controlled radio broadcasts;

(4) Close all amateur radio stations, except those operating as a part of the Radio Amateur Civil Emergency Service (RACES).

§ 214.5 Responsibilities.

(a) The Director, OSTP, will issue such policy guidance, rules, regulations, procedures, and directives as may be necessary to assure effective frequency usage during war or national emergency conditions.

(b) The FCC shall issue appropriate rules, regulations, orders, and instructions and take such other actions not inconsistent with the actions of the Director, OSTP, as may be necessary to ensure the immediate availability of the frequencies and facilities between 10 and 25,000 kHz provided for in emergency plans for use of the radio spectrum.

(c) The FCC shall assist the Director in the preparation of emergency plans pursuant to Part 18, Executive Order 11490 (3 CFR, 1966–1970 Comp., p. 820).

(d) Each Federal Government agency concerned shall develop and be prepared to implement its own plans, and shall make necessary preemergency arrangements with non-Government entities for the provision of desired facilities or services, all subject to the guidance and control of the Director.

§ 214.6 Postattack procedures and actions.

(a) The frequency management staff supporting the Director, OSTP, will be comprised of predesignated personnel from the frequency management staffs of the government user agencies and the FCC, will have proceeded to the OSTP relocation site in accordance with alerting orders in force.

(b) Government agencies having need for new radio frequency assignments or for modification of existing assignments involving a change in the frequency usage pattern shall unless otherwise provided submit applications therefor to the Director, OSTP, by whatever means of communication are available and appropriate, together with a statement of any preapplication coordination accomplished. The Director, OSTP, will review such applications, accomplish the necessary additional coordination insofar as practicable, consider all pertinent views and comments, and grant or deny, as he shall determine, the assignment of such frequencies. All concerned will be informed promptly of his decisions.

(c) Non-Government entities having need for new radio frequency assignments or for modifications of existing assignments will continue to submit applications therefor to the FCC, or in accordance with FCC instructions. Such applications shall be coordinated with the director, OSTP, and granted subject to the approval of the Director, OSTP, or his delegate.

(d) All changes of radio frequency usage within U.S. military theaters of operation will be coordinated with the Director, OSTP, where harmful interference is likely.

(e) Where submission to the Director, OSTP, is impracticable, the applicant shall:

(1) Consult emergency plans for use of the radio spectrum and the Frequency Assignment Lists;

(2) Accomplish such coordination as appropriate and possible;

(3) Act in such manner as to have a minimum impact upon established services, accepting the responsibility entailed in taking the temporary action required.

(4) Advise the Director, OSTP, as soon as possible of the action taken, and submit an application for retroactive approval.

PART 215—FEDERAL GOVERNMENT FOCAL POINT FOR ELECTROMAGNETIC PULSE (EMP) INFORMATION

Sec.
215.0 Purpose and authority.
215.1 Background.
215.2 Assignment of responsibilities.

AUTHORITY: 84 Stat. 2083, and E.O. 12046, 43 FR 13349, March 29, 1978.

SOURCE: 43 FR 50437, Oct. 30, 1978, unless otherwise noted.

§ 215.0 Purpose and authority.

The purpose of this part is to designate a focal point within the Federal Government for electromagnetic pulse (EMP) information concerning telecommunications. It is issued pursuant to the authority of Reorganization Plan No. 1 of 1970, 84 Stat. 2083, Executive Order 12046 (43 FR 13349 et seq.) and the President's memorandum of August 21, 1963, "Establishment of a National Communications System." (28 FR 9413, 3 CFR, 1959-1963 Comp., p. 858).

§ 215.1 Background.

(a) The nuclear electromagnetic pulse (EMP) is part of the complex environment produced by nuclear explosions. It consists of transient voltages and currents which can cause malfunctioning and serious damage to electrical and electronic equipment.

(b) The Defense Nuclear Agency (DNA) is the overall technical coordinator for the Army, Navy, Air Force, and DOE laboratories on matters concerning nuclear weapons, nuclear weapons effects, and nuclear weapons testing. It acts as the focal point between the service laboratories and other agencies. The Defense Communications Agency (DCA) maintains a data base for telecommunications for the National Communications System (NCS) and provides a capability for conducting telecommunications survivability studies for civil and military departments and agencies.

(c) In order to disseminate among affected Federal agencies information concerning the telecommunications effects of EMP and available protective measures, and in order to avoid duplication of research efforts, it is desirable to designate a focal point within the Federal Government for telecommunications EMP matters.

§ 215.2 Assignment of responsibilities.

The Executive Agent, NCS, shall be the focal point within the Federal Government for all EMP technical data and studies concerning telecommunications. It shall provide such data and the results of such studies to all appropriate agencies requesting them. It shall coordinate and approve EMP telecommunications tests and studies, and shall keep the National Security Council informed regarding such tests and studies being conducted and planned.

CHAPTER III—NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION, DEPARTMENT OF COMMERCE

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PART 300—MANUAL OF REGULATIONS AND PROCEDURES FOR FEDERAL RADIO AND FREQUENCY MANAGEMENT

AUTHORITY: Exec. Order 12046 (March 27, 1978), 43 FR 13349, 3 CFR 1978 Comp., p. 158.

§ 300.1 Incorporation by reference of the Manual of Regulations and Procedures for Federal Radio Frequency Management.

(a) The Manual of Regulations and Procedures for Federal Radio Frequency Management (hereinafter referred to as the NTIA Manual) is issued by the Assistant Secretary of Commerce for Communications and Information, and is specifically designed to cover the Assistant Secretary's frequency management responsibilities pursuant to delegated authority under Executive Order 12046 (March 27, 1978).

(b) The Federal agencies shall meet the requirements set forth in the May 1989 edition of the NTIA Manual, as amended by revisions dated September 1989 and January 1990, inclusive, which is incorporated by reference with the approval of the Director, Office of the FEDERAL REGISTER in accordance with 5 U.S.C. 552(a) and 1 CFR part 51.

(c) The NTIA Manual is updated January, May, and September of each year and notice of these changes are printed in the FEDERAL REGISTER. The NTIA Manual can be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402, by referring to Catalog Number 903-008-00000-8. The NTIA Manual is on file at the Office of the Federal Register, 1100 L Street NW., Room 8401, Washington, DC 20408.

[52 FR 49016, Dec. 29, 1987, as amended at 55 FR 9324, Mar. 13, 1990]

FINDING AIDS

A list of CFR titles, subtitles, chapters, subchapters and parts and an alpha-etical list of agencies publishing in the CFR are included in the CFR Index and inding Aids volume to the Code of Federal Regulations which is published sep-rately and revised annually.

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Office of Airworthiness, 800 Independence Ave., SW., Washington, DC 20591	
Technical Standard Order, TSO–C91a, Emergency Locator Transmitter Equipment, April 29, 1985.	80.1053, 87.141
Inter-Governmental Maritime Consultative Organization (IMCO [Now International Maritime Organization (IMO)]	
4 Albert Embankment, London, SE 17SR, United Kingdom	
IMCO Resolution A. 477 (XII). Title: Performance Standards for Radar Equipment. Document adopted by IMCO November 19, 1981.	80.825
Radio Technical Commission for Maritime Services	
P.O. Box 19087, Washington, DC 20036	
Volume 11 of RTCM Special Committee No. 65 Final Report; Part 11. Title: "Performance Specification for a General Purpose Navigational Radar Set for Oceangoing Ships of 1,600 Tons Gross Tonnage and Upwards for Ships Already Fitted". Document approved by RTCM July 18, 1978..	
Volume 11 of RTCM Special Committee No. 65 Final Report with Change 1 Entered; Part 1 including Appendix A. Title: "Performance Specification For a General Purpose Navigational Radar Set For Oceangoing Vessels of 1,600 Tons Gross Tonnage and Upwards for New Radar Installations". Title of Appendix A: "General Purpose Shipborne Navigational Radar Set For Oceangoing Ships—*Design and Testing Specifications". Document approved by RTCM July 18, 1978.*	80.825
RTCM paper 133–87/SC 103–33, dated May 15, 1987, entitled "RCTM Recommended Performance Specification for a General Purpose Navigational Radar Set for Oceangoing Ships of 500 Gross Tons and Upwards for New Radar Installations", including Appendix A, entitled "General Purpose Shipborne Navigational Radar Set for Oceangoing Ships—Design and Testing Specifications".	80.825
RTCM "Recommended Standards for 406 MHz Satellite Emergency Position-Indicating Radiobeacons (EPIRBS)", dated July 31, 1987, with editorial updates of December 31, 1987.	80.825

Title 47–Telecommunications

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Table of OMB Control Numbers

The OMB control numbers for Chapter I of Title 47 were consolidated into § 0.408 at 49 FR 18306, Apr. 30, 1984. Section 0.408 is reprinted below for the convenience of the user.

§ 0.408 OMB control numbers assigned pursuant to the Paperwork Reduction Act.

(a) *Purpose.* This section collects and displays the control numbers assigned to information collection requirements of the Commission by the Office of Management and Budget pursuant to the Paperwork Reduction Act of 1980, Pub. L. 96-511. The Commission intends that this section comply with the requirements of section 3507(f) of the Paperwork Reduction Act, which requires that agencies 'display a current control number assigned by the Director of the Office of Management and Budget ("OMB") for each agency information collection requirement. OMB control numbers assigned to Commission forms are not listed in this section since those numbers appear on the forms.

(b) *Display.*

47 CFR part or section where identified and described	Current OMB Control No
1.65(c)	3060-0449
1.1206	3060-0430
1.720–1.734	3060-0411
1.1307	3060-0004
1.1308	3060-0004
1.1311	3060-0004
1.1404	3060-0392
1.1408	3060-0392
1.1705	3060-0344
1.1709	3060-0345
2.948	3060-0398
2.955	3060-0329
15.7	3060-0397
15.117(g)(2)–(3)	3060-0398
15.236	3060-0324
15.312(c)	3060-0387
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21.201	3060-0206
21.307	3060-0206
21.406	3060-0206
21.706	3060-0206
21.806	3060-0206
21.910	3060-0396
22.307	3060-0150
22.406	3060-0150
22.501(l)(10)(ii)	3060-0094
22.609(e)	3060-0431
22.1101	3060-0451
25.390	3060-0164
25.391	3060-0343
Part 32	3060-0370
Part 36	3060-0233
41.31	3060-0165
Part 42	3060-0166
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43.22	3060-0395
43.42	3060-0167
43.43	3060-0168
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63.701	3060-0357
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73.1250	3060-0175
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73.1510	3060-0176
73.1560	3060-0178
73.1590	3060-0179
73.1610	3060-0180
73.1615	3060-0181
73.1620	3060-0182
73.1635	3060-0386
73.1680	3060-0341
73.1690	3060-0374
73.1740	3060-0184

47 CFR part or section where identified and described	Current OMB Control No.
73.1820	3060-0126
73.1840	3060-0183
73.1870	3060-0206
73.1920	3060-0209
73.1930	3060-0210
73.1940	3060-0211
73.2080	3060-0212
73.3523	3060-0427
3.3524	3060-0423
3.3525	3060-0213
3.3526	3060-0214
3.3527	3060-0215
3.3538	3060-0216
3.3544	3060-0190
3.3550	3060-0188
3.3594	3060-0187
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4.433	3060-0254
4.452	3060-0246
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.604	3060-0242
.633	3060-0241
.651	3060-0240
.703	3060-0236
.751	3060-0248
.781	3060-0249
.784	3060-0250
.833	3060-0251
.913	3060-0425
.1281	3060-0309
.1284	3060-0342
.12	3060-0310
.29	3060-0024
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.54	3060-0311
.66	3060-0375
.73	3060-0349
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157	3060-0419
159	3060-0419
205	3060-0313
209	3060-0314
221	3060-0315
305	3060-0316
601	3060-0289
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615	3060-0331
619	3060-0356
11	3060-0339
27	3060-0346
33	3060-0288
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80.409(d)-(e)	3060-0364
80.413	3060-0264
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90.38(b)	3060-0204
90.41(b)	3060-0218
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90.131(b)	3060-0225
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90.517	3060-0290
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90.629(a)	3060-0307
90.633 (f) and (g)	3060-0280
90.651	3060-0281
94.17	3060-0282
94.25 (f)-(g), and (i)	3060-0284
94.27(a)(6)	3060-0312
94.31	3060-0272
94.43	3060-0273
94.45	3060-0274
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97.5	3060-0303
97.9	3060-0302
97.213	3060-0222
97.311	3060-0347
97.523	3060-0368

(Sec. 4(i), Communications Act of 1934, as amended; 47 CFR 0.231(d))

[49 FR 18306, Apr. 30, 1984, as amended at 50 FR 9632, Mar. 11, 1985; 51 FR 12157, Apr. 9, 1986; 51 FR 34619, Sept. 30, 1986; 52 FR 35918, Sept. 24, 1987; 53 FR 5184, Feb. 22, 1988; 53 FR 6916, Mar. 3, 1988; 54 FR 3038, Jan. 23, 1989; 54 FR 35650, Aug. 29, 1989; 55 FR 39277, Sept. 26, 1990]

Redesignation Table

At 42 FR 8332, Feb. 9, 1977, part 95 was revised. For the convenience of the user, the following tables show the redesignations in subparts A, C, and D, and E of part 95.

REDESIGNATION TABLE

	Subpart			Former edition
	A	C	D	
General:				
Basis and purpose	§ 95.1	§ 95.201	§ 95.401	§ 95.1
Definitions	§ 95.3	§ 95.203	§ 95.403	§ 95.3
Applications and licenses:				
Eligibility for station license	§ 95.11	§ 95.211	§ 95.411	§ 95.13
General citizenship requirements	§ 95.13	§ 95.213	§ 95.413	§ 95.7
Standard forms to be used	§ 95.15	§ 95.215	§ 95.415	§ 95.19
Filing of applications	§ 95.17	§ 95.217	§ 95.417	§ 95.15
Mailing address furnished by licensee	§ 95.19	§ 95.219	§ 95.419	§ 95.14
Who may sign applications	§ 95.21	§ 95.221	§ 95.421	§ 95.17
Defective applications	§ 95.23	§ 95.223	§ 95.423	§ 95.29
Amendment or dismissal of application	§ 95.25	§ 95.225	§ 95.425	§ 95.25
Partial grant	§ 95.27	§ 95.227	§ 95.427	§ 95.31
License term	§ 95.29	§ 95.229	§ 95.429	§ 95.33
Types of operation authorized	§ 95.31	§ 95.231	§ 95.431	§ 95.6
Transfer of license prohibited	§ 95.33	§ 95.233	§ 95.433	§ 95.27
Changes in terms of license	§ 95.35	§ 95.235	§ 95.435	§ 95.35
Limitations on antenna structures	§ 95.37	§ 95.237	§ 95.437	§ 95.37
Station operating requirements:				
Station authorization required	§ 95.51	§ 95.251	§ 95.451	§ 95.11
Posting station license and transmitter identification cards or plates	§ 95.53	§ 95.253	§ 95.453	§ 95.101
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Policy governing the assignment/availability of frequencies	§ 95.57	§ 95.257	§ 95.457	§ 95.5
Emission types authorized	§ 95.59	§ 95.259		§ 95.47
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Permissible communications	§ 95.61		§ 95.461	§ 95.81
Emergency and assistance to motorist use	§ 95.63		§ 95.463	§ 95.85
Operation by, or on behalf of, persons other than the licensee	§ 95.65	§ 95.265	§ 95.465	§ 95.87
Telephone answering services	§ 95.67		§ 95.467	§ 95.89
Duration of transmissions	§ 95.69	§ 95.269	§ 95.469	§ 95.91
Station identification	§ 95.71	§ 95.271	§ 95.471	§ 95.95
Station location	§ 95.73	§ 95.273	§ 95.473	§ 95.117
Control points, dispatch points and remote control	§ 95.75			§ 95.119
Dispatch points and remote control		§ 95.275	§ 95.475	§ 95.119
Civil defense communications	§ 95.77		§ 95.477	§ 95.121
Station administration requirements:				
Prohibited communications	§ 95.101	§ 95.301	§ 95.501	§ 95.83
False signals	§ 95.103		§ 95.503	§ 95.115
Current copy of rules required	§ 95.105	§ 95.305	§ 95.505	§ 95.105
Answers to notices of violations	§ 95.107	§ 95.307	§ 95.507	§ 95.113
External radio frequency power amplifiers prohibited			§ 95.509	§ 95.44
Transmitter service and maintenance	§ 95.111	§ 95.311	§ 95.511	§ 95.97
Modification of transmitters			§ 95.513	§ 95.35
Tests and adjustments	§ 95.115	§ 95.315	§ 95.515	§ 95.93
Inspection and maintenance of tower marking and lighting and associated control equipment	§ 95.117			§ 95.107
Recording of tower light inspections	§ 95.119			§ 95.111
Inspection of stations and station records	§ 95.121	§ 95.321	§ 95.521	§ 95.103

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eneral:		
Basis and purpose	§ 95.601	§ 95.1
Definitions	§ 95.603	§ 95.3
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Availability of frequencies	§ 95.611	§ 95.41
Transmitter power	§ 95.613	§ 95.43
Frequency tolerance	§ 95.615	§ 95.45
Emission limitations	§ 95.617	§ 95.49
Modulation requirements	§ 95.619	§ 95.51
Compliance with technical requirements	§ 95.621	§ 95.53
hibited equipment:		
External radio frequency power amplifiers	§ 95.631	§ 95.44
Type acceptance and certification:		
Acceptability of transmitters for licensing	§ 95.641	§ 95.55
Procedure for type acceptance of equipment	§ 95.643	§ 95.57
Additional requirements for type acceptance	§ 95.645	§ 95.58
Submission of noncrystal controlled Class C station transmitters for type approval	§ 95.647	§ 95.59
Type approval of receiver-transmitter combinations	§ 95.649	§ 95.61
Minimum equipment specifications	§ 95.651	§ 95.63
Test procedure	§ 95.653	§ 95.65
Certificate of type approval	§ 95.655	§ 95.67

Cross Reference Table

At 51 FR 31213, Sept. 2, 1986, parts 81 and 83 were removed and reorganized into new part 80. For the convenience of the user, the following cross reference table shows the summary of changes reflected as a result of the reissuance of the regulations, as reorganized into part 80.

CROSS REFERENCE TABLE

Old section No.	New section No. and title	Summary of changes
81.1	80.1 Basis and purpose	Clarified.
81.2 (a–o)	80.5 Definitions	Clarified.
81.3 (a–v)	80.5 Definitions	Clarified.
81.4 (a–r)	80.5 Definitions	Clarified.
81.5 (a–e)	80.5 Definitions	Clarified.
81.6 (a–d)	80.5 Definitions	Clarified
81.7 (a–u)	80.5 Definitions	Clarified.
81.8	80.5 Definitions	Clarified.
81.9 (a–e)	80.5 Definitions	Clarified.
81.20	80.23 Filing of applications	Clarified.
81.21 (a&b)	Deleted	
81.22 (a&b)	80.17 Administrative classes of stations	Clarified.
81.23 (a&b)	80.15 Eligibility for station license	Clarified.
81.24	80.19 Standard forms to be used	Clarified.
	80.405 Station license	Clarified.
81.25 (a–d)	Deleted	
81.27 (a–c)	Deleted	
81.28 (a&b)	Deleted	
81.29	Deleted	
81.30	Deleted	
81.31 (a–d)	80.21 Supplemental information required	Clarified.
81.33	80.501 Supplemental eligibility requirements	Clarified.
	80.507 Scope of service	Clarified.
81.34 (a&b)	80.39 Authorized station location	Clarified.
81.35	80.19 Standard forms to be used	Simplified.
81.36 (a)	80.19 Standard forms to be used	Simplified.
81.36 (b)	Deleted	
81.36 (c)	80.29 Changes during license term	Clarified.
81.36 (d)	80.29 Changes during license term	Simplified.
81.37 (a)	80.19 Standard forms to be used	Simplified.
81.37 (b)	Deleted	
81.39 (a&b)	80.23 Filing of applications	Simplified.
81.40 (a–d)	80.23 Filing of applications	Simplified.
	80.37 One authorization for plurality of stations	Simplified.
81.41 (a–c)	Deleted	
81.42 (a&b)	Deleted	
81.44	Deleted	
81.46 (a&b)	Deleted	
81.47 (a&b)	Deleted	
81.48 (a–c)	Deleted	
81.51	Deleted	
81.61	80.49 Time in which station is paced in operation	Clarified.
81.65 (a&b)	80.25 License term	Simplified
81.68 (a–e)	80.37 One authorization for a plurality of stations	Clarified.
81.70 (a–b)	80.39 Authorized station location	Clarified.
81.71 (a–c)	80.41 Control points and dispatch points	Clarified.
81.72 (a–j)	Deleted	
81.73	80.47 Operation during emergency	Simplified.
81.74	80.302 Notice of discontinuance, reduction or impairment of service involving a distress watch.	Clarified.
	80.471 Discontinuance or impairment of service	Simplified.

CROSS REFERENCE TABLE—Continued

ction No.	New section No. and title	Summary of changes
	80.31 Cancellation of license	Clarified.
	80.61 Commission inspection of station	Simplified.
	80.403 Availability of documents	Simplified.
-d)	80.405 Station license	Simplified.
-d)	Deleted	
	80.68 Facilities requirements for public coast stations using telegraphy	Simplified.
	80.67 General facilities requirements for coast stations	Simplified.
	80.69 Facilities requirements for public coast stations using telephony	Clarified.
e)	80.67 General facilities requirements for coast stations	Simplified.
c)	80.70 Special provisions relative to coast stations VHF facilities	No change.
	Deleted	
g)	80.71 Operating controls for stations on land	No change.
b)	80.72 Antenna requirements for coast stations	No change.
	Deleted	
c)	Deleted	
b)	80.63 Maintenance of transmitter power	Clarified.
	Deleted	
b)	80.74 Public coast station facilities for a telephony busy signal	No change.
)	Deleted	
)	80.409 Station logs	Simplified.
)	80.76 Requirements for land station control points	Simplified.
, g)	80.209 Transmitter frequency tolerances	Clarified.
	Deleted	
)	80.207 Classes of emissions	Simplified.
	80.385 Frequencies for automated systems	Clarified.
)	80.205 Bandwidths	Simplified.
	80.215 Transmitter power	Simplified.
)	80.203 Authorization of transmitters for licensing	Clarified.
	80.203 Authorization of transmitters for licensing	Simplified.
	80.203 Authorization of transmitters for licensing	Simplified.
	Deleted	
	80.221 Special requirements for generating automatically the radiotelephone alarm signal.	Simplified.
	80.211 Emission limitations	Clarified.
	80.213 Modulation requirements	Simplified.
	80.219 Special requirements for narrow-band direct-printing (NB-DP) equipment	Simplified.
	80.225 Special requirements for digital selective calling (DSC) equipment	Simplified.
	80.151 Classification of operator licenses and endorsements	Clarified.
), (d),	80.153 Coast station operator requirements	Simplified; (b) and (f) deleted.
	80.167 Limitation on operators	Simplified.
	Deleted	
	80.169 Operators required to adjust transmitters or radar	Simplified.
	80.177 When operator license is not required	Clarified.
	80.175 Availability of operator licenses	Simplified.
	80.407 Operator authorization	Simplified.
	80.86 International regulations applicable	No change.
	80.87 Cooperative use of frequency assignments	Simplified.
	80.88 Secrecy of communications	No change.
	80.89 Unauthorized transmission	Simplified.
	80.90 Suspension of transmission	No change.
	80.106 Intercommunication in the mobile service	No change.
	80.107 Service of private coast stations and marine utility stations	No change.
	80.105 General obligations of coast stations	No change.
(c),	80.95 Message charges	Simplified; (d) deleted.
	Deleted	
	80.91 Order of priority of communications	No change.
	80.312 Priority of distress transmissions	No change.
	80.94 Control by coast or Government station	Simplified.
	80.92 Prevention of interference	Simplified.
	80.108 Transmission of traffic lists by coast stations	Simplified.
	80.109 Transmissions to a plurality of mobile stations by a public coast station	Simplified.
	80.93 Hours of service	No change.
	80.311 Authority for distress transmission	Simplified.
	80.321 Acknowledgement of receipt of distress message	Simplified.
	80.322 Form of acknowledgement	Simplified.
	80.325 Control of distress traffic	Simplified.

CROSS REFERENCE TABLE—Continued

Old section No.	New section No. and title	Summary of changes
81.187 (e)	80.324 Transmission of distress message by station not itself in distress	Simplified.
81.188 (a&b)	80.317 Radiotelegraph and radiotelephone alarm signals	No change.
81.189 (a&b)	80.318 Use of alarm signals	No change.
81.190 (a&b)	80.301 Watch requirements	Simplified.
81.190 (c)	Deleted	
81.191 (a)	Deleted	
81.191 (b)	80.301 Watch requirements	Simplified.
81.191 (c)	80.303 Watch on 156.8 Mhz (channel 16)	Clarified.
81.191 (d&e)	Deleted	
81.192	80.96 Maintenance tests	Simplified.
81.193 (a–d)	80.110 Inspection and maintenance of tower markings and associated control equipment.	Simplified.
81.194 (a–c)	80.409 Station logs	Simplified.
81.201	80.451 Supplemental eligibility requirements	Simplified.
81.202 (a–c)	80.453 Scope of communications	Clarified.
81.203 (a&b)	80.359 Frequencies for digital selective calling	Simplified.
81.203 (b–e)	80.121 Public coast stations using telegraphy	Simplified.
81.204 (a&b)	80.361 Frequencies for narrow direct printing (NB–DP) and data transmissions	Simplified.
81.204 (c)	Deleted	
81.205 (a–e)	80.121 Public coast stations using telegraphy	Clarified.
81.206 (a–c)	80.455 Assignment and use of frequencies for manual Morse code telegraphy	Simplified.
81.206 (a, d, e)	80.357 Working frequencies	Simplified.
81.206 (b&c)	80.353 General uses—radiotelegraphy	Simplified.
81.207 (a–c)	80.355 Distress, urgency, safety, call and reply frequencies	Simplified.
81.207 (d)	Deleted	
81.207 (e)	80.359 Frequencies for digital selective calling (DSC)	Clarified.
81.209 (a–c)	80.121 Public coast stations using telegraphy	Simplified.
81.218 (a–d)	80.357 Working frequencies	Simplified.
81.219	80.100 Morse code requirement	Clarified.
81.220	80.99 Radiotelegraph station identification	Clarified.
81.221 (a&b)	80.98 Radiotelegraph testing procedure	No change.
81.222 (a–c)	80.97 Radiotelegraph operating procedure	Clarified.
81.223 (a)	80.401 Station documents requirement	Simplified.
81.223 (b)	Deleted	
81.223 (c)	80.403 Availability of documents	Clarified.
81.224 (a–h)	80.409 Station logs	Clarified.
81.230	80.122 Public coast stations using facsimile	Clarified.
	80.363 Frequencies for facsimile	Clarified.
81.301	80.451 Supplement eligibility requirements	No change.
81.302 (a–c)	80.453 Scope of communications	Clarified.
81.303 (a)	80.467 Duplication of VHF service	No change.
81.304 (a–h)	80.465 Assignment and use of frequencies for telephony	Simplified.
81.305 (a&b)	80.369 Distress, urgency, safety, call and reply frequencies	Simplified.
81.306 (a&b)	80.371 Public correspondence frequencies	Simplified.
81.307	80.371 Public correspondence frequencies.	Simplified.
81.308 (a&b)	80.373 Private communications frequencies	Simplified.
81.310 (a)	80.99 Radiotelegraph station indentification.	Simplified.
	80.102 Radiotelephone station identification	Simplified.
81.310 (b&c)	Deleted	
81.311 (a&b)	80.101 Radiotelephone testing procedures	Simplified.
81.312 (a–d)	80.111 Radiotelephone operating procedures for coast stations	Simplified.
81.313 (a–c)	80.401 Station documents requirement	Simplified.
81.314 (a–f)	80.409 Station logs	Simplified.
81.330 (a–e)	80.469 Maritime mobile repeater stations in Alaska	Simplified.
81.330 (f–i)	80.373 Private communications frequencies	Simplified.
81.351 (a–b)	80.501 Supplemental eligibility requirements	Simplified.
81.352 (a–c)	80.503 Cooperative use of facilities	Simplified.
81.354 (a–b)	80.505 Points of communication	Clarified.
81.355 (a–d)	80.507 Scope of service	Simplified.
81.356	80.373 Private communications frequencies	Simplified.
81.357 (a–c)	80.383 Vessel Traffic Services (VTS) System frequencies	No change.
81.358 (a–c)	80.511 Assignment limitations	No change.
81.359 (a–c)	80.513 Frequency coordination	No change.
81.360 (a–e)	80.367 General uses—radiotelephony	Simplified.
	80.369 Distress, urgency, safety, call and reply frequencies	Simplified.
	80.373 Private communications frequencies	Simplified.
81.361 (a–c)	80.131 Radioprinter operations	Simplified.
	80.1155 Radioprinter	Simplified.
81.352 (a–c)	80.131 Radioprinter operations	Simplified.

CROSS REFERENCE TABLE—Continued

tion No.	New section No. and title	Summary of changes
	80.1155 Radioprinter	
b)	80.131 Radioprinter operations	Simplified.
	80.1155 Radioprinter	Simplified.
	80.517 Time limitation on calling	Simplified.
b)	80.101 Radiotelephone testing procedures	No change.
)	80.111 Radiotelephone operating procedures for coast stations	Clarified.
	80.102 Radiotelephone station identification	Clarified.
	80.601 Licensing limitations	Simplified.
)	80.375 Radiodetermination frequencies	Simplified.
)	80.605 U.S. Coast Guard coordination	Simplified.
)	80.653 Scope of communication	No change.
	80.33 Developmental license	Clarified.
)	80.33 Developmental license	Clarified.
)	80.33 Developmental license	Clarified.
)	80.391 Frequencies for developmental stations	Simplified.
	80.33 Developmental license	Simplified.
	80.33 Developmental license	Simplified.
	80.33 Developmental license	Simplified.
	80.33 Developmental license	Simplified.
4	Deleted	Simplified.
	80.149 Answers to notice of violation	
	Deleted	No change.
	Deleted	
	Deleted	
	Deleted	
	80.653 Scope of communications	
	80.653 Scope of communications	Simplified.
	80.389 Frequencies for maritime support station	Simplified.
	Deleted	No change.
	80.655 Assignment of use of frequencies	
	80.381 Frequencies of fixed stations	Simplified.
	80.555 Scope of communications	Simplified.
	80.381 Frequencies for fixed stations	Simplified.
	80.553 Supplementary eligibility requirements	Simplified.
	80.381 Frequencies for fixed stations, See also 80.211, 80.557, and 80.559	Simplified.
	80.15 Eligibility for station license	Simplified.
	80.705 Hours of service of Alaska public fixed stations	Simplified.
	80.703 Priority of distress and other signals	Simplified.
	80.409 Station logs	Simplified.
	80.707 Cooperative use of frequency assignments	Clarified.
	Deleted	Clarified.
	80.708 Frequencies available	
	80.709 Frequencies available	Clarified.
	80.709 Frequencies available	Clarified.
	80.711 Use of U.S. Government frequencies	Clarified.
	80.751 Scope	No change.
	80.753 Signal strength requirements at the service area contour	No change.
	80.755 Applicability	No change.
	80.757 Topographical data	No change.
	80.759 Average terrain elevation	No change.
	80.753 Effective antenna height	No change.
	80.765 Effective radiated power	No change.
	80.767 Propagation curve	No change.
	80.769 Shadow loss	No change.
	80.773 Ratio of desired to undesired signal strengths	No change.
	80.771 Method of computing coverage	No change.
	80.761 Conversion graphs	No change.
	80.57 Canada/USA channeling arrangement for VHF maritime public correspondence.	No change. No change.
	80.57 Do	
	80.57 Do	No change.
	80.57 Do	No change.
	80.57 Do	No change.
	80.57 Do	No change.
	80.475 Scope of service of Automated Maritime Telecommunications System (AMTS).	No change. Simplified
	80-1169 Automated Maritime Telecommunications System (AMTS)	Simplified.
	80.477 Points of communication	Simplified.
	80.385 Frequencies for automated systems	No change.

CROSS REFERENCE TABLE—Continued

Old section No.	New section No. and title	Summary of changes
	80.1171 Assignment and use of frequencies	Simplified.
83.1 (a&b)	80.1 Basis and purpose	No change.
83.2 (a–y)	80.5 Definitions	Clarified.
83.3 (a–t)	80.5 Definitions	Clarified.
83.4 (a–w)	80.5 Definitions	Clarified.
83.5 (a–c)	80.5 Definitions	Clarified.
83.6 (a–n)	80.5 Definitions	Clarified.
83.7 (a–l).	80.5 Definitions	Clarified.
83.8 (a–h)	80.5 Definitions	Clarified.
83.20 (a&b)	80.13 Station license required	No change.
83.22	80.15 Eligibility for station license	Clarified.
83.24 (a–c)	80.15 Eligibility for station license	Clarified.
83.28 (a&b)	80.19 Standard forms to be used	Simplified.
83.30 (a–c)	Deleted	
83.32 (a–e)	80.23 Filing of applications	No change.
83.32 (f–g)	80.51 Ship earth station licensing	No change.
83.34	Deleted	
83.36	Deleted	
83.38	Deleted	
83.40 (a–c)	80.19 Standard forms to be used	Simplified.
	80.25 License term	No change.
83.42 (a&b)	80.29 Changes during license term	Clarified.
83.44	80.56 Transfer of ship station license prohibited	No change.
83.46 (a&b)	Deleted	
83.48	80.31 Cancellation of license	Clarified.
83.50 (a&b)	80.53 Application for portable ship station license	No change.
83.52 (a&b)	80.55 Application for fleet station license	Clarified
83.54	Deleted	
83.56	80.507 Scope of service	Simplified.
83.60 (a–c)	80.59 Compulsory ship station	Simplified.
83.70 (a–e)	80.59 Compulsory ship stations	No change.
83.72 (a&b)	80.59 Compulsory ship stations	No change.
83.74	80.59 Compulsory ship stations	
83.101 (a)	80.61 Commission inspection of stations	No change.
83.101 (b)	80.79 Inspection of ship stations by a foreign Government	Simplified.
83.102 (a–c)	80.405 Station license	Simplified.
83.103	Deleted	
83.104 (a–h)	80.80 Operating controls for ship stations	No change.
83.105 (a–d)	80.142 Ships using telegraphy	No change.
83.106 (a–c)	80.143 Required frequencies for radiotelephony	No change.
	80.956 Required Frequencies and uses	Clarified.
83.107 (a–c)	80.81 Antenna requirements for ship stations	No change.
83.108	Deleted	
83.110 (a–b)	80.63 Maintenance of transmitter power	Clarified.
83.111	Deleted	
83.112	Deleted	
83.113	Deleted	
83.114 (a&b)	80.935 Station clock	Simplified.
83.115 (a–e)	80.409 Station logs	Clarified.
83.131 (a–g)	80.209 Transmitter frequency tolerances	Simplified.
83.132 (a–g)	80.207 Classes of emission	Simplified.
83.133 (a&b)	80.205 Bandwidths	Simplified.
83.133 (c&d)	Deleted	
83.134 (a–l)	80.215 Transmitter power	Simplified
	80.1053 Special requirements for Class A EPIRB stations	Clarified.
	80.1057 Special requirements for Class C EPIRB stations	Clarified.
83.135 (a)	80.217 Suppression of interference aboard ships	Simplified.
83.135 (b)	Deleted	
83.136 (a–f)	80.211 Emission limitations	Simplified.
83.137 (a–d)	80.213 Modulation requirements	Simplified.
	80.1057 Special requirements for Class C EPIRB stations	Clarified.
83.138 (a–c)	80.203 Authorization of transmitter for licensing	Simplified.
83.139 (a–j)	80.203 Authorization of transmitter for licensing	Simplified.
83.140 (a–c)	80.203 Authorization of transmitter for licensing	Simplified.
83.141 (a–d)	80.223 Special requirement for survival craft stations	Clarified.
83.142 (a–c)	80.221 Special requirements for automatically generating the radiotelephone alarm signal.	Simplified.
83.143 (a–f)	80.219 Special requirements for narrow-band direct-printing (NB–DP) equipment	Simplified.
83.144 (a–m)	80.1053 Special requirements for Class A EPIRBs	Simplified.

CROSS REFERENCE TABLE—Continued

Old section No.	New section No. and title	Summary of changes
	80.1055 Special requirements for Class B EPIRBs	Simplified.
.145 (a&b)	80.1053 Special requirements for Class A EPIRBs	Simplified.
.145 (c)	Deleted	
.146 (a-g)	80.1057 Special requirements for Class C EPIRBs	No change.
.151 (a)	80.151 Classification of operator's licenses and endorsements	Clarified.
.152 (a)	80.155 Ship station operator requirements	Clarified.
.152 (b)	80.157 Radio officer defined	Clarified.
.152 (c)	Deleted	
.153	Deleted	
.155 (a-e)	80.159 Operator requirements for Title III of the Communications Act and the Safety Convention.	Simplified.
156 (a&b)	80.159 Do	Simplified.
157 (a&b)	80.161 Operator requirements for Great Lakes Radio Agreement	Clarified.
158	80.163 Operator requirements of the Vessel Bridge-to-Bridge Act	No change.
159	80.165 Operator requirements for voluntary stations	Clarified.
160 (a&b)	80.167 Limitations on operators	Simplified.
161 (a-c)	Deleted	
162 (a&b)	80.169 Operators required to adjust transmitters or radar	Clarified.
164 (a-d)	80.177 When operator license is not required	Simplified.
165 (a&b)	80.175 Availability of operator licenses	Simplified.
173 (a&b)	80.114 Authority of master	No change.
174	80.88 Secrecy of communications	No change.
175	80.106 Intercommunication in the mobile services	Simplified.
76	Deleted	
77 (a&b)	80.91 Order of priority of communications	No change.
78	80.89 Unauthorized transmissions	Clarified.
79	80.94 Control by coast or Government station	No change.
80	80.87 Cooperative use of frequency assignments	No change.
81 (a-e)	80.92 Prevention of interference	Simplified.
82	80.90 Suspension of transmission	No change.
83 (a&b)	80.93 Hours of service	Simplified.
84 (a-c)	80.409 Station logs	Clarified.
85	Deleted	
86 (a-f)	80.115 Operational conditions for use of associated ship units	Simplified.
01 (a&b)	80.304 Watch requirement during silence period	Clarified.
02 (a-c)	80.305 Watch requirements of the Communications Act and the Safety Convention	Clarified.
03 (a-d)	80.305 Do	Clarified.
04 (a,c-e)	80.306 Provisions governing the radiotelegraph watch	Clarified.
04 (b)	Deleted	
5	80.307 Compulsory use of radiotelegraph auto alarm	No change.
6	80.308 Watch required by the Great Lakes Radio Agreement	No change.
7	80.309 Watch required by Bridge-to-Bridge Act	Clarified.
1	80.146 Watch on 500 kHz	No change.
3	80.147 Watch on 2182 kHz	No change.
4 (a-c)	80.148 Watch required by voluntary vessels	No change.
1	Deleted	
2	80.311 Authority for distress transmissions	Clarified.
3	80.313 Frequencies for use in distress	Clarified.
4 (a-c)	80.314 Distress signals	No changes.
5 (a-c)	80.315 Distress calls	No changes.
6 (a-c)	80.316 Distress messages	No change.
7 (a-e)	80.319 Radiotelegraph distress call and message transmission procedure	No change.
8 (a-e)	80.320 Radiotelephone distress call and message transmission procedure	No change.
9 (a&b)	80.321 Acknowledgement of receipt of distress message	No change.
0 (a&b)	80.322 Form of acknowledgement	No change.
1 (a&b)	80.323 Information furnished by an acknowledging station	No change.
2 (a-d)	80.324 Transmission of distress message by station not itself in distress	No change.
3 (a-d)	80.325 Control of distress traffic	No change.
4 (a&b)	80.326 Notification of resumption of normal working	No change.
5 (a&b)	80.317 Radiotelegraph and radiotelephone alarm signals	No change.
6 (a&b)	80.318 Use of alarm signals	No change.
7 (a-d)	80.327 Urgency signals	No change.
8 (a-c)	80.328 Urgency message	No change.
9 (a-d)	80.329 Safety signals	No change.
0 (a-d)	80.330 Safety message	No change.
(a-c)	80.331 Bridge-to-Bridge communication procedure	No change.
(a&b)	80.332 Equipment to aid search and rescue operations	No change.
	80.333 Stations in maritime mobile-satellite service	Simplified.
	80.145 Class C EPIRB operational procedures	No change.

CROSS REFERENCE TABLE—Continued

Old section No.	New section No. and title	Summary of changes
83.261	Deleted	
83.262	Deleted	
83.263 (a&b)	Deleted	
83.271	80.95 Message charges	No change.
83.272	80.95 Message charges	No change.
83.273	80.95 Message charges	Clarified.
83.274 (a&b)	80.95 Message charges	Clarified.
83.275	Deleted	
83.276	80.95 Message charges	Simplified.
83.277	Deleted	
83.302	80.141 General provisions for ship stations	No change.
83.303 (a–c)	80.141 General provisions for ship stations	No change.
83.304 (a&b)	80.141 General provisions for ship stations	No change.
83.315 (a&b)	80.351 Scope	Simplified.
83.316 (a–c)	80.357 Working frequencies	Simplified.
83.317 (a–i)	80.355 Distress, urgency, safety, call and reply frequencies	Simplified.
83.318 (a&b)	80.359 Frequencies for digital selective calling (DSC)	Simplified.
83.319 (a&c)	80.357 Working frequencies	Simplified.
83.320 (a,c&d)	80.361 Frequencies for narrow-band direct-printing (NBDP) and data transmissions	Clarified.
83.321	80.361 Frequencies for narrow-band direct-printing (NBDP) and data transmissions	Clarified.
83.322 (a–d)	80.355 Distress, urgency, safety, call and reply frequencies	Clarified.
83.323 (a–c)	80.355 Distress, urgency, safety, call and reply frequencies	Clarified.
83.324 (a–g)	80.357 Working frequencies	Simplified.
83.325	80.100 Morse code requirement	Clarified.
	80.353 General uses—radiotelegraphy	Clarified.
83.326 (a–c)	80.99 Radiotelegraph station identification	No change.
83.327 (a&b)	80.98 Radiotelegraph testing procedure	No change.
83.328 (a–g)	80.97 Radiotelegraph operating procedures	Clarified.
83.328 (a,c,d)	80.353 General uses—radiotelegraphy	No change.
83.329 (a–d)	80.142 Ships using radiotelegraphy	No change.
83.330 (a–j)	80.142 Ships using radiotelegraphy	No change.
83.332 (a&b)	80.363 Frequencies for facsimile	Clarified.
	80.1157 Facsimile	Clarified.
83.333 (a–c)	80.401 Station document requirement	Clarified.
83.334 (a–c)	80.409 Station logs	Clarified.
83.335	80.385 Frequencies for automated systems	Simplified.
83.337 (a–c)	80.131 Radioprinter operations	Simplified.
	80.1155 Radioprinter	Simplified.
83.339 (a–e)	80.131 Radioprinter operations	Simplified.
	80.1155 Radioprinter	Simplified.
83.341 (a&b)	80.131 Radioprinter operations	Simplified.
	80.1155 Radioprinter	Simplified.
83.351 (a&b)	80.369 Distress, urgency, safety, call and reply frequencies	Simplified.
83.352 (a–d)	80.369 Distress, urgency, safety, call and reply frequencies	Simplified.
83.353 (a–d)	80.369 Distress, urgency, safety, call and reply frequencies	Simplified.
83.354	80.371 Public correspondence frequencies	Simplified.
83.355 (a–c)	80.371 Public correspondence frequencies	Simplified.
83.356	80.371 Public correspondence frequencies	Simplified.
83.357	Deleted	
83.358 (a–e)	80.373 Private communications frequencies	Simplified.
83.359 (a)	80.371 Public correspondence frequencies	Clarified.
83.359 (a)	80.373 Private communications frequencies	Clarified.
83.359 (b)	80.379 Maritime frequencies assignable to aircraft stations	Simplified.
83.360 (a&b)	80.373 Private communications frequencies	Simplified.
83.361 (a–c)	80.383 Vessel traffic services (VTS) system frequencies	Simplified.
83.362 (a–g)	80.373 Private communications frequencies	Simplified.
83.363 (a&b)	80.367 General conditions of use	Simplified.
83.364 (a–t)	80.102 Radiotelephone station identification	Simplified.
83.365 (a&b)	80.101 Radiotelephone testing procedure	Simplified.
83.366 (a–j)	80.116 Radiotelephone operating procedures for ship stations	Simplified.
83.367 (a&b)	80.401 Station document requirement	Simplified.
83.368 (a–e)	80.409 Station logs	Simplified.
83.370 (a&b)	80.373 Private radiotelephone frequencies	Simplified.
83.373	80.385 Frequencies for automated systems	Simplified.
83.401 (a–c)	80.375 Radiodetermination frequencies	Simplified.
83.403	80.375 Radiodetermination frequencies	Simplified.
	80.1201 Special provisions for cable repair ship stations	Simplified.
83.404 (a&b)	80.375 Radiodetermination frequencies	Simplified.
83.405	Deleted	

CROSS REFERENCE TABLE—Continued

Old section No.	New section No. and title	Summary of changes
83.431	80.33 Developmental license	Simplified.
83.432 (a-c)	80.33 Developmental license	Simplified.
83.433 (a-c)	80.391 Frequencies for developmental operations	Simplified.
83.434 (a-c)	80.33 Developmental license	Simplified.
83.435 (a-c)	80.33 Developmental license	Simplified.
83.436	80.33 Developmental license	Simplified.
83.437 (a-c)	80.33 Developmental license	Simplified.
83.441 (a-d)	80.802 Inspection of station	Simplified.
3.442	80.804 Radio station	Simplified.
3.443 (a-c)	80.805 Radio installations	Clarified.
3.444 (a-g)	80.806 Requirements of main installation	No change.
3.445 (a-i)	80.807 Requirements of radiotelephone installation	No change.
3.446 (a&b)	80.808 Requirements of reserve installation	No change.
3.447	80.809 Routing of power supply wiring	No change.
3.448	80.810 User of reserve installation	Clarified.
.449 (a&b)	80.811 Tests of resurve installation and automatic radiotelegraph alarm-signal keyer	No change.
.451	80.812 Automatic-alarm-signal keying device	No change.
.452 (a&b)	80.813 Installation of automatic-alarm-signal keying device	No change.
.453 (a&b)	80.814 Radiotelegraph auto alarm	Simplified.
.454 (a-e)	80.815 Installation of radiotelegraph auto alarm	Clarified.
.457 (a-c)	80.817 Tests of radiotelegraph auto alarm	No change.
.458 (a&b)	80.818 Direction finding and homing equipment	No change.
.459 (a&b)	80.819 Requirements for radio direction finder	No change.
460	80.820 Auxiliary receiving antenna	Simplified.
461 (a&b)	80.821 Installation of direction finder	Simplified.
462 (a&b)	80.822 Contingent acceptance of direction finder calibration	Clarified.
463 (a-c)	80.823 Check bearings by authorized ship personnel	Simplified.
464 (a&b)	80.824 Homing facility requirements	No change.
465 (a-c)	80.825 Radar installation requirements specifications	Clarified.
466 (a-c)	80.826 Interior communication systems	No change.
467	80.827 Requirements for interior communications system	No change.
468	80.828 Radiotelegraph station clock	No change.
469 (a-f)	80.829 Survival craft non-portable radiotelegraph installation	No change.
471 (a-e)	80.830 Power supply for survival craft non-portable radiotelegraph installation	No change.
72 (a-c)	80.831 Survival craft portable radiotelegraph equipment	No change.
73 (a-c)	80.832 Tests fo survival craft radio equipment	No change.
74 (a-d)	80.833 Class S survival craft emergency position indicating radiobeacons EPIRB's	No change.
75 (a-c)	80.834 Survival craft portable two-way radiotelephone apparatus	No change.
79 (a&b)	80.835 Ship and survival craft station spare parts, tools, instruction books, circuit diagrams and testing equipment.	No change.
80 (a-d)	80.836 General and individual ship exemptions	No change.
81	Deleted	
82 (a-e)	80.853 Radiotelephone station	Clarified.
83 (a-f)	80.854 Radiotelephone installation	Clarified.
84 (a-h)	80.855 Radiotelephone transmitter	Clarified.
6	80.856 Automatic radiotelephone alarm signal generator	No change.
7	80.857 Installation of automatic radiotelephone alarm signal generator	No change.
8 (a-e)	80.858 Radiotelephone receiver	No change.
9 (a&b)	80.859 Main power supply	No change.
1 (a-h)	80.860 Reserve power supply	No change.
2	80.861 Required capacity	No change.
3 (a-e)	80.862 Proof of capacity	No change.
4 (a-c)	80.863 Antenna system	No change.
5 (a&b)	80.864 Emergency electric lights	No change.
7	80.865 Radiotelephone station clock	No change.
8	80.866 Spare antenna	No change.
9 (a&b)	80.867 Ship station tools, instruction books, circuit diagrams and testing equipment	No change.
	80.868 Card of instructions	No change.
	80.869 Test of radiotelephone station	No change.
(a&b)	80.870 Survival craft radio equipment	No change.
	80.901 Applicability	No change.
	80.903 Inspection of radiotelephone installation	No change.
	80.411 Vessel certification or exemption	Simplified.
(a-d)	80.905 Radiotelephone installation	Simplified.
(a&b)	80.907 Principal operating position	Simplified.
(a&b)	80.909 Medium frequency transmitter	No change.
(a-e)	80.911 VHF transmitter	Simplified.
(a-f)	80.913 Radiotelephone receivers	Clarified.
(a-c)	80.915 Main power supply	Clarified.

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83.522 (a-g)	80.917 Reserve power supply	Simplified.
83.523	80.919 Required capacity	Clarified.
83.524 (a-e)	80.921 Proof of capacity	Clarified.
83.526	80.923 Antenna system	Clarified.
83.527 (a&b)	80.925 Electric light	Clarified.
83.528	80.927 Antenna radio frequency indicator	No change.
83.529	80.929 Nameplate	No change.
83.531	80.931 Test of radiotelephone installation	No change.
83.532 (a-c)	80.933 General exemption	No change.
83.536 (a-e)	80.951 Applicability	No change.
83.537	80.953 Inspection and certification	No change.
83.539 (a-d)	80.955 Radiotelephone installation	No change.
83.541 (a&b)	80.957 Principal operating position	No change.
83.542 (a-c)	80.959 Radiotelephone transmitter	No change.
83.543 (a&b)	80.961 Radiotelephone receiver	No change.
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83.545 (a-e)	80.965 Reserve power supply	No change.
83.546	80.967 Antenna system	No change.
83.547 (a&b)	80.969 Illumination of operating controls	No change.
83.548	80.971 Test of radiotelephone installation	No change.
83.551 (a&b)	80.251 Scope	Simplified.
83.552 (a-g)	80.253 Technical requirements of main transmitter	Simplified.
83.553 (a-e)	80.255 Technical requirements of reserve transmitter	Clarified.
83.554 (a&b)	80.251 Scope	Clarified.
83.555 (a-h)	80.259 Technical requirements for radiotelephone auto alarm receiver (auto alarm)	Simplified.
83.556 (a-k)	80.257 Manufacturing requirements for radiotelegraph auto alarm receiver (auto alarm).	Clarified.
83.557	80.251 Scope	No change.
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83.562 (a-i)	80.261 Technical requirements for automatic alarm signal keying device	Clarified.
83.564	80.251 Scope	Simplified.
83.567 (a-e)	80.263 Common requirements for survival craft radio equipment	Simplified.
83.568 (a-g)	80.265 Requirements for survival craft portable radio equipment	Simplified.
83.569 (a-e)	80.267 Requirements for survival craft nonportable radio equipment	Simplified.
83.570 (a-c)	80.269 Technical requirements for radiotelephone distress frequency watch receiver	Simplified.
83.601 (a-e)	80.1059 Special requirements for Class S EPIRB stations	Simplified.
83.603 (a-i)	80.271 Technical requirements for portable survival craft radiotelephone tranceivers	Clarified.
83.651 (a&b)	80.149 Answer to notice of violation	Clarified.
83.652	Deleted	Clarified.
83.701 (a-d)	80.1001 Applicability	No change.
83.703	80.1003 Station required	Clarified.
83.705	80.1005 Inspection of station	Simplified.
83.709 (a-b)	80.1007 Bridge-to-bridge radiotelephone installation	No change.
83.711	80.1009 Principal operator and operating position	Clarified.
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83.715 (a-c)	80.1013 Receiver	Clarified.
83.717 (a-c)	80.1015 Power supply	Simplified.
83.719 (a&b)	80.1017 Antenna system	Simplified.
83.721	80.1019 Antenna radio frequency indicator	No change.
83.723	80.1021 Nameplate	No change.
83.725	80.1023 Test of radiotelephone installation	No change.
83.811 (a&b)	80.1177 Assignment and use of frequencies	No change.
83.813 (a&b)	80.15 Eligibility for station license	Simplified.
83.815 (a-c)	80.1175 Scope of communications	Simplified.
83.817	80.1179 On-board repeater limitations	Simplified.
83.819 (a-c)	80.413 On-board station equipment records	Simplified.
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83.823 (a&b)	80.1175 Scope of communications	Simplified.
83.825 (a-d)	80.1181 Station identification	Simplified.
83.835 (a-f)	80.1183 Remote control for maneuvering or navigation	Clarified.
83.840	80.1185 Supplemental eligibility requirement for satellite stations	No change.
83.841	80.1187 Scope of communication	No change.
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83.843 (a&b)	80.377 Frequencies for ship earth stations	No change.
83.851 (a-d)	80.871 VHF radiotelephone station	Simplified.
83.852 (a-d)	80.872 The VHF radiotelephone installation	No change.
83.853 (a-d)	80.873 VHF radiotelephone transmitter	No change.
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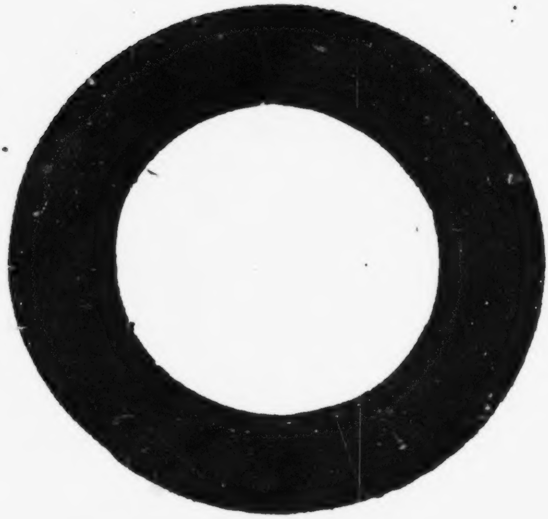
83.857 (a–h)	80.877 Controls and indicators required for the VHF radiotelephone installation	No change.
83.1100	80.1169 Automated Maritime Telecommunications System (AMTS)	No change.
83.1103	80.1169 Automated Maritime Telecommunications System (AMTS)	Simplified.
83.1105	80.385 Frequencies for automated systems	Simplified.
	80.1171 Assignment and use of frequencies	No change.
		Simplified.



List of CFR Sections Affected

All changes in this volume of the Code of Federal Regulations which were made by documents published in the FEDERAL REGISTER since January 1, 1973, are enumerated in the following list. Entries indicate the nature of the changes effected. Page numbers refer to FEDERAL REGISTER pages. The user should consult the entries for chapters and parts as well as sections for revisions.

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